

THE
NAUTICAL ALMANAC

AND
ASTRONOMICAL EPHEMERIS,
FOR THE YEAR 1789.

Published by ORDER of the
COMMISSIONERS OF LONGITUDE.

L O N D O N:
PRINTED BY WILLIAM RICHARDSON,
PRINTER;

AND SOLD BY
PETER ELMSLY in the STRAND,
Bookfeller to the said COMMISSIONERS.

M DCC LXXXIII.

[Price Three Shillings and Six Pence.]

EXTRACT from the Act of Parliament
concerning the Longitude, made in the
Fifth Year of the Reign of his present
Majesty.

WHEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from time to time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorized by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of his Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to his Majesty, his Heirs and Successors, and the other Moiety to him or them that shall prosecute in them, or sue for the same.

EXTRACT



EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year of the Reign of his present Majesty.

BE it Enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of June One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five thousand

a 2

Pounds,

EXTRACT, &c.

Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it determines the same to One Half of the said Distance: Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major Part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at *Greenwich*, then in Two Voyages round the Island of *Great Britain*, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint; and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been tried

EXTRACT, &c.

tried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar and Lunar Tables, their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an Allowance of Half a Degree for the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed intirely upon the Principles of Gravitation laid down by Sir *Isaac Newton* (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have been further confirmed and proved by Comparison with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward shall be due and paid, when the said Commissioners, or Two Thirds of them at least, shall have declared and determined, that such Tables are sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens, within the Limits above-mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the First Author or Authors, Discoverer or Discoverers, of
any

EXTRACT, &c.

any such Method, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five thousand Pounds, if it shall determine the said Longitude within One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them at least, shall, after proper Trial have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective Limits above-mentioned.

And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before-mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be intitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And

EXTRACT, &c.

And be it further Enacted, by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from time to time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy,

EXTRACT, &c.

Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorized and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of discovering the Longitude at Sea, shall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by this Act.

27 AP 66

By

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we have employed proper Persons to compute Nautical Almanacs and Astronomical Ephemerides for the Years 1787, 1788, 1789, 1790, 1791, and 1792, which will greatly contribute to make the Lunar Tables constructed by the late Professor MAYER of *Gottingen* (which you have already printed with our Authority) more generally useful; and whereas we think fit to employ you to print the said Nautical Almanacs and Astronomical Ephemerides: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to cause the same to be printed, together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as shall have been constructed under our Direction, and will be delivered to you by the Reverend Dr. NEVIL MASKELYNE, his Majesty's Astronomer Royal at *Greenwich*; and for so doing this shall be your sufficient Warrant. Given under our Hands and Seals the 13th Day of *February* 1783.

To Mr. WILLIAM
RICHARDSON,
Printer in the *Strand*.

HOWE	(L.S.)
C.W. CORNWALL	(L.S.)
H. DUNDAS	(L.S.)
T. FRANKLAND	(L.S.)
RODNEY	(L.S.)
J. YOUNG	(L.S.)
KEPPEL	(L.S.)
JOS. BANKS	(L.S.)
N. MASKELYNE	(L.S.)
J. SMITH	(L.S.)
E. WARING	(L.S.)
A. SHEPHERD	(L.S.)
J. MARRIOTT	(L.S.)
T. ORDE	(L.S.)
G. ROSE	(L.S.)
P. STEPHENS	(L.S.)
C. MIDDLETON	(L.S.)
J. SMITH	(L.S.)

By Command of the Commissioners,

H. PARKER, Secretary,

b

By

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we think fit to employ you (in the room of Mr. *John Nourse* deceased) to publish and vend, and to cause to be published and vended, all such Nautical Almanacs and Astronomical Ephemerides, and likewise all such other useful Tables, constructed under our Direction, as have hitherto been printed by Mr. *William Richardson*, from the Year 1767 to the present Time, and also such as may henceforward be printed by him, or any other Person employed by us for the Purpose, for the several Years next ensuing, down to the Year 1792 inclusive. We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to publish and vend, and to cause to be published and vended, such Nautical Almanacs and Astronomical Ephemerides, as well as such other useful Tables, constructed under our Direction, as have hitherto been printed by Mr. *William Richardson* from the Year 1767 to the present Time, and also such as may henceforward be printed by him, or any other Person employed by us for the Purpose, for the several Years next ensuing down to the Year 1792 inclusive. For which this shall be your Warrant. Given under our Hands and Seals at the Admiralty, the 7th Day of December 1782.

KEPPEL	(L.S.)
C.W. CORNWALL	(L.S.)
T. FRANKLAND	(L.S.)
RODNEY	(L.S.)
J. YOUNG	(L.S.)
R. HARLAND	(L.S.)
HOWE	(L.S.)
JOS. BANKS	(L.S.)
N. MASKELYNE	(L.S.)
T. HORNSBY	(L.S.)
J. SMITH	(L.S.)
E. WARING	(L.S.)
A. SHEPHERD	(L.S.)
J. MARRIOTT	(L.S.)
T. ORDE	(L.S.)
G. ROSE	(L.S.)
P. STEPHENS	(L.S.)
C. MIDDLETON	(L.S.)
J. SMITH	(L.S.)

To Mr. PETER ELMSLY,
Bookfeller in the Strand.

By Command of the Commissioners,

H. PARKER, Secretary.

P R E F A C E.

THE Commissioners of Longitude, in pursuance of the Powers vested in them by Act of Parliament, present the Public with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1789, being the Twenty-third Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Public in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER of Gottingen to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which

P R E F A C E.

are the principal and only very delicate Part of the Calculus ; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published in the First Edition of the Tables requisite to be used with the EPHEMERIS, and since, with Improvements, in the Second Edition of the same Tables ; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL, which are now also annexed to the Second Edition of the REQUISITE TABLES ; but still more so by the GENERAL TABLES for correcting the apparent Distance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commissioners of Longitude, and published under the Care of Dr. SHEPHERD, Plumian Professor of Astronomy and experimental Philosophy, at CAMBRIDGE, in 1772.

All the Calculations of the EPHEMERIS relating to the Sun were made from Mr. MAYER'S last Manuscript Tables, received by the Board of Longitude after his Decease, which have been printed under my Inspection, and published in 1770 ; but the Calculations of the Moon, which had been made since the Year 1777 inclusive from
new

P R E F A C E.

new Tables, improved from MAYER's Tables, composed by Mr. CHARLES MASON, under my Direction, from Calculations made by Order of the Board of Longitude, upon the Series of Lunar Observations made by the late Dr. BRADLEY, and published in the Nautical Almanac of 1774, are in this EPHEMERIS, for the First time, computed from Tables still farther corrected by Mr. MASON, and rendered more exact by the Addition of Eight Equations to the Number in MAYER's Tables, taken from MAYER's Theory, but settled as to the *Maxima* from the said Observations, and the Whole being calculated to Tenths of a Second. These new Tables, when compared with the above-mentioned Series of Observations, a proper Allowance being made for the unavoidable Error of Observation, seem to give always the Moon's Longitude in the Heavens correctly within 30 Seconds of a Degree; which greatest Error, added to a possible Error of One Minute in taking the Moon's Distance from the Sun or a Star at Sea, will at a Medium only produce an Error of 42 Minutes of Longitude. The Error of the same Tables in Latitude seems never to exceed a Minute, which will but triflingly affect the computed Distances of the Moon from the Sun and zodiacal Stars set down in the EPHEMERIS.

The Calculations of the Planets, and of the Eclipses of Jupiter's Satellites were calculated from the Tables of Mr. WARGENTIN, annexed to M. DE LA LANDE's Astronomy, excepting the Eclipses of Jupiter's Second Satellite, which were inserted in this EPHEMERIS for the Ninth time from new Tables transmitted to me from their learned

Author

P R E F A C E.

Author Mr. WARGENTIN, Secretary to the Royal Academy of Sciences at STOCKHOLM, and published at the End of the Nautical Almanac of 1779.

All the Articles of the EPHEMERIS were computed by Two separate Persons, and examined by a Third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which for Noon were computed by One Person, and for Midnight by another, and the Truth of these Calculations ascertained by means of Differences, which for the Moon's Longitude were carried as far as the Fourth Order.

NEVIL MASKELYNE,
ASTRONOMER ROYAL.

GREENWICH,
August 18th,
1783.

27. AP 66

EXPLANATION of the Characters used in the EPHEMERIS.

The PLANETS, &c.

- | | |
|-------------|--------------|
| ☉ The Sun. | ☿ The Earth. |
| ☾ The Moon. | ♂ Mars. |
| ☿ Mercury. | ♃ Jupiter |
| ♀ Venus. | ♄ Saturn. |
- ♌ The Moon's, or any other Planet's Ascending Node.
♍ The Descending Node.
♊ Conjunction, or Planets situated in the same Longitude.
♋ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.

Signs of the Zodiac.

- | | |
|--------------|-------------------|
| S. | S. |
| 0. ♈ Aries. | 6. ♎ Libra. |
| 1. ♉ Taurus. | 7. ♏ Scorpio. |
| 2. ♊ Gemini. | 8. ♐ Sagittarius. |
| 3. ♋ Cancer. | 9. ♑ Capricornus. |
| 4. ♌ Leo. | 10. ♒ Aquarius. |
| 5. ♍ Virgo. | 11. ♓ Pisces. |

ECLIPSES for the YEAR 1789.

- May 8. ☾ eclipsed, invisible: H. M.
Beginning — — — — 20. 38
Middle — — — — 21. 31
End — — — — 22. 24
Digits eclipsed 2°. 54' on ☾'s northern Limb.
- May 24. ☉ eclipsed, invisible:
☉ at 10^h. 20^m. 1/2 in Long. 2°. 40'. 3'. ☾'s Lat. 30' 1/2 S.
☉ will be centrally eclipsed on the Merid. at
10^h. 18'. in Long. 154° 1/2 West, and Lat. 11° 1/2 South.
- Nov. 2. ☾ eclipsed, visible: H. M.
Beginning — — — — 11. 27 1/2
Middle — — — — 12. 32 1/2
End — — — — 13. 36 1/2
Dig. eclipsed 3°. 40' on ☾'s southern Limb.
16. ☉ eclipsed, invisible:
☉ at 15^h. 29' in Long. 7°. 25°. 16'. ☾'s Lat. 33' N.
☉ will be centrally eclipsed on the Merid. at 15^h.
22' in Long. 129° 1/2 East, and Lat. 14° 1/2 North.

O B L I.

OBLIQUITY, &c.

1789. Obliquity of the Ecliptic.		Equat. of Equin. Points.	
		D. M. S.	S.
Jan.	1. —————	23. 27. 55, 8	+ 16, 4
Apr.	1. —————	23. 27. 55, 0	+ 15, 8
July	1. —————	23. 27. 54, 1	+ 15, 0
Oct.	1. —————	23. 27. 53, 3	+ 14, 1
Dec.	31. —————	23. 27. 52, 6	+ 13, 1

27 AP 66

I. JANUARY 1789. [1]		
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.
1	Th.	<i>Circumcision.</i>
2	F.	
3	Sa.	
4	Su.	<i>2d Sun. after Christmas.</i>
5	M.	<i>Epiphany.</i>
6	Tu.	
7	W.	<i>Lucian.</i>
8	Th.	
9	F.	
10	Sa.	
11	Su.	<i>1st Sun. after Epiphany.</i>
12	M.	<i>Hil. Cam. Ter. begins.</i>
13	Tu.	
14	W.	<i>Oxf. Term begins.</i>
15	Th.	
16	F.	
17	Sa.	
18	Su.	<i>2d Su. aft. Epi. 2. Char.</i>
19	M.	<i>[birth-day kept. Prisca.</i>
20	Tu.	<i>Fabian. In 8 days of St.</i>
21	W.	<i>Agnes. [Hil. 1 ret.</i>
22	Th.	<i>Vincent.</i>
23	F.	<i>Hilary Term begins.</i>
24	Sa.	
25	Su.	<i>3d Sun. aft. Epiph. Con-</i>
26	M.	<i>[version of St. Paul.</i>
27	Tu.	<i>Pr. Au. Fred. born. In 15</i>
28	W.	<i>[days of St. Hil. 2 ret.</i>
29	Th.	
30	F.	<i>K. Charles 1. martyr.</i>
31	Sa.	

Phases of the Moon.

	D. H. M.
First Quarter —	4. 4. 24
Full Moon —	11. 5. 46
Last Quarter —	17. 20. 39
New Moon —	25. 18. 21

Other Phenomena.

D.H.M.	
6.18.15	☾ ♂ ♀
8.15.30	☾ ♂ ♀
9. 4.14	Em. of ☾ 8 * 12'
	S. of ☾ 's cent.
19. 7	☾ ♀ ♀
10. 0.36	☾ ♀ ♀
13.48	☾ ☽ ♀
11.	☽ ♀ Ser. d.L. 40'.
12.10.22	☾ 1 ad ☽ ☽
9.43½	Im. of 2 ad ☽ ☽
	* ☽ ¼ S. of ☾ 's cent.
10.50	Em. * 2¼ North.
15. 0½	Im. of ☽ ☽ * 10½
	S. of ☾ 's cent.
15.57	Em. * 6¼ South.
13. 3.59	☾ ☽ ☽
12. 1	☾ ☽ ☽
15. 4.32	☾ ☽ ☽
19. 0.38	☾ enters ☽
7.50	☾ 1 ad ☽ ☽
20. 1.38	☾ ☽ ☽
5.37	☾ ♂ ♀
22.17.10	☾ 1 ad ☽ ♀
21. 9	☾ ♀
30.	☽ ☽ ♀ d.L. 26'.

[2] J A N U A R Y 1789. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Th.	9. 11.38.10	18.50.36,6	22.57.18	4. 23,0	28,0
2	F.	9. 12.39.22	18.55. 1,3	22.51.45	4. 51,0	27,6
3	Sa.	9. 13.40.33	18.59.25,5	22.45.43	5. 18,6	27,2
4	Su.	9. 14.41.44	19. 3.49,3	22.39.15	5. 45,8	26,7
5	M.	9. 15.42.54	19. 8.12,7	22.32.20	6. 12,5	26,2
6	Tu.	9. 16.44. 4	19.12.35,5	22.24.58	6. 38,7	25,7
7	W.	9. 17.45.13	19.16.57,8	22.17. 9	7. 4,4	25,2
8	Th.	9. 18.46.21	19.21.19,6	22. 8.55	7. 29,6	24,6
9	F.	9. 19.47.30	19.25.40,8	22. 0.14	7. 54,2	23,9
10	Sa.	9. 20.48.37	19.30. 1,4	21.51. 8	8. 18,1	23,4
11	Su.	9. 21.49.43	19.34.21,4	21.41.37	8. 41,5	22,8
12	M.	9. 22.50.50	19.38.40,8	21.31.40	9. 4,3	22,2
13	Tu.	9. 23.51.56	19.42.59,6	21.21.18	9. 26,5	21,5
14	W.	9. 24.53. 1	19.47.17,7	21.10.32	9. 48,0	20,8
15	Th.	9. 25.54. 6	19.51.35,1	20.59.21	10. 8,8	20,1
16	F.	9. 26.55.11	19.55.51,9	20.47.47	10. 28,9	19,5
17	Sa.	9. 27.56.15	20. 0. 8,0	20.35.49	10. 48,4	18,8
18	Su.	9. 28.57.19	20. 4.23,3	20.23.26	11. 7,2	18,0
19	M.	9. 29.58.23	20. 8.38,0	20.10.42	11. 25,2	17,3
20	Tu.	10. 0.59.26	20.12.51,9	19.57.34	11. 42,5	16,6
21	W.	10. 2. 0.28	20.17. 5,1	19.44. 4	11. 59,1	15,8
22	Th.	10. 3. 1.30	20.21.17,5	19.30.12	12. 14,9	15,0
23	F.	10. 4. 2.32	20.25.29,1	19.15.57	12. 29,9	14,3
24	Sa.	10. 5. 3.32	20.29.39,9	19. 1.23	12. 44,2	13,4
25	Su.	10. 6. 4.32	20.33.50,0	18.46.27	12. 57,6	12,6
26	M.	10. 7. 5.31	20.37.59,2	18.31.10	13. 10,2	11,9
27	Tu.	10. 8. 6.29	20.42. 7,6	18.15.33	13. 22,1	11,0
28	W.	10. 9. 7.26	20.46.15,2	17.59.37	13. 33,1	10,1
29	Th.	10.10. 8.21	20.50.21,9	17.43.22	13. 43,2	9,3
30	F.	10.11. 9.15	20.54.27,8	17.26.48	13. 52,5	8,5
31	Sa.	10.12.10. 8	20.58.32,9	17. 9.55	14. 1,0	

III. JANUARY 1789. [3]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Ditance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 19, 2	1. 10, 9	2. 32, 9	9. 992642	8. 5. 56
7	16. 19, 1	1. 10, 6	2. 32, 8	9. 992694	8. 5. 37
13	16. 18, 8	1. 10, 1	2. 32, 8	9. 992841	8. 5. 18
19	16. 18, 2	1. 9, 5	2. 32, 6	9. 993089	8. 4. 59
25	16. 17, 5	1. 8, 8	2. 32, 3	9. 993412	8. 4. 40

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days.	H. M. S.
1	1. 12. 15	*4	9. 9. 20	2	5. 0. 12 I
2	19. 39. 47	7	22. 26. 11	*2	8. 26. 40 E
*4	14. 7. 28	*11	11. 43. 9	*9	8. 55. 54 I
*6	8. 35. 8	Emerfions.		*9	12. 22. 49 E
8	3. 2. 53	15	3. 50. 30	*16	12. 52. 3 I
9	21. 30. 39	*18	17. 7. 56	*16	16. 19. 29 E
*11	15. 58. 27	*22	6. 25. 32	*23	16. 48. 59 I
*13	10. 26. 21	25	19. 43. 22	23	20. 16. 53 E
Emerfions.		*29	9. 1. 26	30	20. 46. 40 I
*15	7. 8. 54			31	0. 15. 2 E
17	1. 36. 52			IV. Satellite.	
18	20. 4. 52			*14	13. 39. 11 I
*20	14. 32. 55			*14	17. 48. 50 E
*22	9. 0. 58			*31	7. 36. 19 I
24	3. 29. 4			*31	11. 50. 9 E
25	21. 57. 14				
*27	16. 25. 28				
*29	10. 53. 44				
*31	5. 22. 5				

[4] J A N U A R Y 1789. IV.						
Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
M E R C U R Y. Sup. δ 23 ^d . 6 ^h .						
1	7. 29. 58	1. 43 S	8. 28. 36	0. 35 S	24. 3 S	23. 4
4	8. 8. 15	2. 41	9. 3. 11	0. 54	24. 20	23. 12
7	8. 16. 29	3. 35	9. 7. 50	1. 12	24. 26	23. 19
10	8. 24. 46	4. 25	9. 12. 33	1. 27	24. 19	23. 28
13	9. 3. 11	5. 10	9. 17. 20	1. 40	24. 0	23. 35
16	9. 11. 49	5. 49	9. 22. 12	1. 51	23. 27	23. 44
19	9. 20. 48	6. 21	9. 27. 8	1. 58	22. 42	23. 53
22	10. 0. 13	6. 45	10. 2. 10	2. 3	21. 42	0. 0
25	10. 10. 14	6. 58	10. 7. 18	2. 4	20. 29	0. 7
28	10. 20. 56	6. 58	10. 12. 31	2. 2	19. 1	0. 16
31	11. 2. 32	6. 42	10. 17. 50	1. 55	17. 20	0. 25
V E N U S.						
1	6. 11. 34	3. 2 N	8. 5. 24	1. 47 N	19. 28 S	21. 25
7	6. 21. 15	2. 44	8. 12. 45	1. 34	20. 48	21. 30
13	7. 0. 54	2. 21	8. 20. 7	1. 19	21. 47	21. 35
19	7. 10. 32	1. 55	8. 27. 30	1. 3	22. 24	21. 41
25	7. 20. 7	1. 25	9. 4. 54	0. 45	22. 37	21. 48
M A R S.						
1	9. 9. 47	1. 27 S	9. 10. 32	0. 52 S	23. 55 S	23. 53
7	9. 13. 21	1. 31	9. 15. 9	0. 54	23. 30	23. 47
13	9. 16. 58	1. 35	9. 19. 47	0. 56	22. 56	23. 41
19	9. 20. 36	1. 39	9. 24. 27	0. 58	22. 13	23. 36
25	9. 24. 15	1. 42	9. 29. 7	1. 0	21. 20	23. 30
J U P I T E R. δ 13 ^d . 23 ^h .						
1	3. 23. 48	0. 20 N	3. 26. 35	0. 25 N	21. 16 N	13. 2
7	3. 24. 18	0. 21	3. 25. 48	0. 26	21. 26	12. 32
13	3. 24. 47	0. 22	3. 25. 0	0. 27	21. 36	12. 3
19	3. 25. 17	0. 22	3. 24. 11	0. 28	21. 45	11. 34
25	3. 25. 46	0. 23	3. 23. 24	0. 28	21. 54	11. 5
S A T U R N.						
1	11. 11. 37	1. 55 S	11. 6. 50	1. 49 S	10. 42 S	3. 46
7	11. 11. 49	1. 55	11. 7. 22	1. 48	10. 30	3. 21
13	11. 12. 0	1. 55	11. 7. 57	1. 48	10. 16	2. 57
19	11. 12. 12	1. 56	11. 8. 34	1. 47	10. 2	2. 34
25	11. 12. 24	1. 56	11. 9. 12	1. 47	9. 47	2. 12

V. JANUARY 1789. [5]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Th.	11. 6.30.56	11. 12.27.13	5.11. 8 N	5. 9.53 N
2	F.	11. 18.24.42	11. 24.23.51	5. 5.18	4. 57.21
3	Sa.	0. 0.25.15	0. 6.29.26	4.46. 6	4. 31.33
4	Su.	0. 12.37. 1	0. 18.48.32	4.13.47	3.52.52
5	M.	0. 25. 4.39	1. 1.25.54	3.28.55	3. 2. 4
6	Tu.	1. 7.52.50	1. 14.25.58	2.32.32	2. 0.32
7	W.	1. 21. 5.37	1. 27.52.15	1.26.22	0. 50.27 N
8	Th.	2. 4.45.56	2. 11.46.47	0.13.13 N	0. 24.52 S
9	F.	2. 18.54.37	2. 26. 9. 7	1. 3. 6 S	1. 40.53
10	Sa.	3. 3.29.43	3. 10.55.44	2.17.30	2. 52.11
11	Su.	3. 18.26. 7	3. 25.59.54	3.24.10	3.52.48
12	M.	4. 3.35.41	4. 11.12.15	4.17.23	4. 37.26
13	Tu.	4. 18.48. 8	4. 26.22.11	4.52.32	5. 2.26
14	W.	5. 3.53. 3	5. 11.19.48	5. 7. 3	5. 6.24
15	Th.	5. 18.41.27	5. 25.57.24	5. 0.40	4.50. 9
16	F.	6. 3. 7. 5	6. 10.10.21	4.35.11	4. 16.15
17	Sa.	6. 17. 6.59	6. 23.57.10	3.53.48	3. 28.18
18	Su.	7. 0.41. 2	7. 7.18.56	3. 0.18	2. 30.14
19	M.	7. 13.51.15	7. 20.18.21	1.58.37	1. 25.54
20	Tu.	7. 26.40.50	8. 2.59. 5	0.52.30 S	0. 18.51 S
21	W.	8. 9.13.39	8. 15.24.58	0.14.40 N	0. 47.42 N
22	Th.	8. 21.33.28	8. 27.39.32	1.19.52	1. 50.52
23	F.	9. 3.43.34	9. 9.45.50	2.20.22	2. 48. 6
24	Sa.	9. 15.46.38	9. 21.46.12	3.13.48	3. 37.13
25	Su.	9. 27.44.43	10. 3.42.24	3.58. 7	4. 16.21
26	M.	10. 9.39.24	10. 15.35.51	4.31.42	4. 44. 3
27	Tu.	10. 21.31.55	10. 27.27.50	4.53.19	4. 59.22
28	W.	11. 3.23.44	11. 9.19.48	5. 2.11	5. 1.43
29	Th.	11. 15.16.21	11. 21.13.36	4.57.58	4.50.58
30	F.	11. 27.11.53	0. 3.11.37	4.40.46	4. 27.25
31	Sa.	0. 9.13.11	0. 15.17. 0	4.11. 0	3.51.41

[6] J A N U A R Y 1789. VI.							
Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascens. at Noon.	D's Right Ascens. at Midn.	D's De- clination at Noon.	D's De- clination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Th.	7	3. 40	336. 21	341. 51	4. 19 S	2. 7 S
2	F.	8	4. 22	347. 21	352. 53	0. 6 N	2. 19 N
3	Sa.	9	5. 3	358. 29	4. 10	4. 32	6. 44
4	Su.	10	5. 46	9. 56	15. 51	8. 53	10. 58
5	M.	11	6. 32	21. 55	28. 11	12. 57	14. 50
6	Tu.	12	7. 21	34. 39	41. 20	16. 33	18. 6
7	W.	13	8. 14	48. 15	55. 24	19. 27	20. 32
8	Th.	14	9. 11	62. 46	70. 19	21. 20	21. 49
9	F.	15	10. 10	78. 2	85. 52	21. 57	21. 44
10	Sa.	16	11. 13	93. 45	101. 38	21. 8	20. 9
11	Su.	17	12. 13	109. 29	117. 14	18. 49	17. 10
12	M.	18	13. 11	124. 52	132. 22	15. 12	12. 59
13	Tu.	19	14. 7	139. 42	146. 53	10. 34	8. 0
14	W.	20	15. 0	153. 55	160. 50	5. 20 N	2. 36 N
15	Th.	21	15. 52	167. 39	174. 22	0. 8 S	2. 50 S
16	F.	22	16. 42	181. 2	187. 39	5. 27	7. 58
17	Sa.	23	17. 32	194. 15	200. 51	10. 20	12. 32
18	Su.	24	18. 23	207. 28	214. 6	14. 32	16. 20
19	M.	25	19. 14	220. 46	227. 27	17. 54	19. 13
20	Tu.	26	20. 5	234. 9	240. 52	20. 17	21. 5
21	W.	27	20. 56	247. 35	254. 16	21. 37	21. 53
22	Th.	28	21. 46	260. 54	267. 29	21. 52	21. 36
23	F.	29	22. 35	273. 59	280. 24	21. 5	20. 19
24	Sa.	30	23. 22	286. 43	292. 55	19. 20	18. 8
25	Su.	1	0	299. 1	304. 59	16. 45	15. 11
26	M.	2	0. 6	310. 52	316. 38	13. 29	11. 39
27	Tu.	3	0. 48	322. 19	327. 56	9. 42	7. 40
28	W.	4	1. 30	333. 30	339. 1	5. 34	3. 25 S
29	Th.	5	2. 11	344. 31	350. 2	1. 14 S	0. 59 N
30	F.	6	2. 53	355. 34	1. 9	3. 11 N	5. 22
31	Sa.	7	3. 35	6. 48	12. 33	7. 30	9. 35

VII. J A N U A R Y 1789. [7]							
Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Proport. Lo-gar. at Noon.	Proport. Lo-gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Th.	14. 47	14. 49	54. 15	54. 21	5209	5201
2	F.	14. 51	14. 54	54. 29	54. 40	5190	5175
3	Sa.	14. 57	15. 2	54. 53	55. 9	5158	5137
4	Su.	15. 7	15. 13	55. 27	55. 48	5114	5086
5	M.	15. 19	15. 25	56. 11	56. 35	5056	5026
6	Tu.	15. 32	15. 40	57. 1	57. 29	4992	4957
7	W.	15. 48	15. 56	57. 59	58. 29	4919	4882
8	Th.	16. 4	16. 11	58. 57	59. 25	4848	4813
9	F.	16. 19	16. 25	59. 52	60. 16	4781	4752
10	Sa.	16. 31	16. 36	60. 37	60. 54	4727	4707
11	Su.	16. 40	16. 42	61. 8	61. 17	4690	4679
12	M.	16. 43	16. 43	61. 21	61. 20	4675	4676
13	Tu.	16. 41	16. 39	61. 15	61. 5	4682	4693
14	W.	16. 35	16. 31	60. 52	60. 35	4709	4729
15	Th.	16. 25	16. 19	60. 15	59. 53	4753	4779
16	F.	16. 13	16. 6	59. 29	59. 5	4809	4838
17	Sa.	15. 59	15. 52	58. 39	58. 14	4870	4901
18	Su.	15. 45	15. 39	57. 49	57. 25	4932	4962
19	M.	15. 33	15. 27	57. 2	56. 40	4991	5019
20	Tu.	15. 21	15. 15	56. 19	56. 0	5046	5071
21	W.	15. 11	15. 7	55. 43	55. 27	5093	5114
22	Th.	15. 3	14. 59	55. 13	55. 0	5132	5149
23	F.	14. 56	14. 53	54. 48	54. 38	5165	5178
24	Sa.	14. 51	14. 49	54. 30	54. 22	5189	5199
25	Su.	14. 47	14. 46	54. 16	54. 11	5207	5214
26	M.	14. 45	14. 44	54. 7	54. 4	5219	5223
27	Tu.	14. 44	14. 44	54. 3	54. 3	5225	5225
28	W.	14. 44	14. 45	54. 5	54. 8	5222	5218
29	Th.	14. 46	14. 48	54. 12	54. 19	5213	5203
30	F.	14. 50	14. 53	54. 28	54. 38	5191	5178
31	Sa.	14. 56	15. 0	54. 50	55. 4	5162	5144

[8] J A N U A R Y 1789. VIII.														
Distances of γ 's Center from Sun, and from Stars east of her.														
Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.						
Days.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.						
1	57. 49. 41	56. 22. 3	54. 54. 23	53. 26. 42	51. 58. 59	50. 31. 14	49. 3. 27	47. 35. 37						
2	46. 7. 46	44. 39. 52	43. 11. 55	41. 43. 56	40. 15. 55	38. 47. 51	37. 19. 43	35. 51. 33						
3	34. 23. 20													
4	67. 7. 30	65. 37. 30	64. 7. 17	62. 36. 54	61. 6. 18	59. 35. 29	58. 4. 27	56. 33. 12						
5	55. 1. 42	53. 29. 59	51. 58. 0	50. 25. 46	48. 53. 17	47. 20. 31	45. 47. 28	44. 14. 9						
6	42. 40. 33	41. 6. 40	39. 32. 29	37. 58. 3	36. 23. 20	34. 48. 18	33. 13. 1	31. 37. 30						
7	30. 1. 44	28. 25. 45	26. 49. 35	25. 13. 15	23. 36. 43									
8	59. 16. 32	57. 37. 23	55. 57. 53	54. 18. 2	52. 37. 51	50. 57. 19	49. 16. 30	47. 35. 24						
9	45. 54. 1	44. 12. 20	42. 30. 28	40. 48. 27	39. 6. 16	37. 23. 59	35. 41. 43	33. 59. 27						
10	68. 0. 45	66. 12. 55	64. 24. 43	62. 36. 10	60. 47. 14	58. 57. 58	57. 8. 23	55. 18. 30						
11	53. 28. 19	51. 37. 49	49. 47. 6	47. 56. 9	46. 4. 59	44. 13. 37	42. 22. 8	40. 30. 30						
12	38. 38. 46	36. 46. 54	34. 55. 4	33. 3. 17	31. 11. 31	29. 19. 55	27. 28. 29	25. 37. 18						
13	23. 46. 23													
14	77. 11. 53	75. 17. 59	73. 24. 6	71. 30. 16	69. 36. 28	67. 42. 44	65. 49. 6	63. 55. 34						
15	62. 2. 8	60. 8. 49	58. 15. 41	56. 22. 43	54. 29. 56	52. 37. 22	50. 45. 3	48. 52. 58						
16	47. 1. 7	45. 9. 32	43. 18. 15	41. 27. 15	39. 36. 33	37. 46. 11	35. 56. 9	34. 6. 27						
17	32. 17. 6	30. 28. 7	28. 39. 30	26. 51. 16	25. 3. 25									

IX. JANUARY 1789. [9]																	
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
15																	
16	Antares.	63. 28. 37	61. 42. 51	59. 57. 29	58. 12. 32	56. 27. 58	54. 43. 50	53. 0. 6	51. 16. 46								
17		49. 33. 51	47. 51. 19	46. 9. 13	44. 27. 30	42. 46. 13	41. 5. 20	39. 24. 53	37. 44. 50								
18		36. 5. 13															
15																	
16		113. 43. 15	112. 4. 58	110. 27. 4	108. 49. 33	107. 12. 25	105. 35. 41	103. 59. 19	102. 23. 21								
17		100. 47. 45	99. 12. 32	97. 37. 41	96. 3. 13	94. 29. 8	92. 55. 25	91. 22. 4	89. 49. 4								
18	The Sun.	88. 16. 26	86. 44. 9	85. 12. 13	83. 40. 38	82. 9. 23	80. 38. 28	79. 7. 51	77. 37. 35								
19		76. 7. 38	74. 38. 1	73. 8. 41	71. 39. 40	70. 10. 57	68. 42. 30	67. 14. 19	65. 46. 25								
20		64. 18. 48	62. 51. 27	61. 24. 20	59. 57. 30	58. 30. 54	57. 4. 33	55. 38. 25	54. 12. 31								
21		52. 46. 51	51. 21. 23	49. 56. 10	48. 31. 9	47. 6. 20	45. 41. 43	44. 17. 18	42. 53. 6								
22		41. 29. 5	40. 5. 16	38. 41. 38													
27																	
28	α Arietis.	60. 55. 18	59. 27. 38	57. 59. 58	56. 32. 19	66. 46. 15	65. 18. 29	63. 50. 43	62. 23. 0								
29		49. 14. 10	47. 46. 34	46. 18. 59	44. 51. 25	55. 4. 41	53. 37. 2	52. 9. 24	50. 41. 47								
30		37. 33. 43				43. 23. 51	41. 56. 18	40. 28. 46	39. 1. 14								
30	Aldeba-																
31	ran.	70. 17. 41	68. 48. 35	67. 19. 23	65. 50. 4	64. 20. 39	62. 51. 7	61. 21. 27	59. 51. 40								
F. 1		58. 21. 45	56. 51. 42	55. 21. 30	53. 51. 8	52. 20. 38	50. 49. 57	49. 19. 6	47. 48. 3								
		46. 16. 50															

Distances of γ 's Center from Sun, and from Stars west of her.

[illegible]

XI. JANUARY 1789. [11]																	
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
13	Pollux.	30.	40. 55	32.	27. 45	34.	14. 55	36.	2. 25	37.	50. 14	39.	38. 16	41.	26. 23	43.	14. 37
14		45.	2. 56	46.	51. 10	48.	39. 18	50.	27. 20	52.	15. 19	54.	3. 5	55.	50. 38	57.	37. 58
15		59.	25. 3														
15	Regulus.	22.	25. 57	24.	11. 57	25.	57. 54	27.	43. 49	29.	29. 38	31.	15. 21	33.	0. 52	34.	46. 12
16		36.	31. 21	38.	16. 11	40.	0. 45	41.	45. 1	43.	29. 0	45.	12. 37	46.	55. 55	48.	38. 53
17		50.	21. 32	52.	3. 50	53.	45. 48	55.	27. 26	57.	8. 44	58.	49. 40	60.	30. 16	62.	10. 32
18		63.	50. 27	65.	30. 2	67.	9. 18	68.	48. 14	70.	26. 51	72.	5. 8	73.	43. 7	75.	20. 47
19		76.	58. 9														
19	Spica α	22.	56. 4	24.	33. 20	26.	10. 20	27.	47. 4	29.	23. 33	30.	59. 46	32.	35. 43	34.	11. 26
20		35.	46. 53	37.	22. 4	38.	57. 1	40.	31. 44	42.	6. 13	43.	40. 28	45.	14. 31	46.	48. 21
21		48.	21. 58	49.	55. 23	51.	28. 37	53.	1. 39	54.	34. 30	56.	7. 10	57.	39. 39	59.	11. 59
22		60.	44. 8														
22	Antares.	15.	51. 6	17.	19. 40	18.	48. 26	20.	17. 26	21.	46. 43	23.	16. 9	24.	45. 40	26.	15. 16
23		27.	44. 58	29.	14. 36	30.	44. 14	32.	13. 51	33.	43. 28	35.	13. 3	36.	42. 34	38.	12. 2
24		39.	41. 27														
29	The Sun. F. 1	46.	13. 41	47.	35. 6	48.	56. 40	50.	18. 21	40.	49. 8	42.	10. 6	43.	31. 11	44.	52. 23
30		57.	9. 0	58.	31. 36	59.	54. 22	61.	17. 20	51.	40. 11	53.	2. 9	54.	24. 17	55.	46. 34
31		68.	15. 11							62.	40. 29	64.	3. 50	65.	27. 24	66.	51. 11
F. 1																	

[12]

JANUARY 1789.

XII.

Configurations of the SATELLITES of JUPITER at
Eleven o' Clock at Night.

1	4.	2. I.	⊙	3.
2	4.	2. 3.	⊙	1.
3	4.	3. 1.	⊙	2.
4	2. 4.	3.	⊙	1.
5	2 6 4	3. 1.	⊙	
6	1. 6.		⊙	4. 2. 3.
7			⊙	1. 2. 4. 3.
8		2. I.	⊙	3. 4.
9	3. 6.	2.	⊙	1. 4.
10		3. 1.	⊙	2. 4.
11		3.	⊙	2. I. 4.
12		2. 3. 1.	⊙	4.
13	1. 6.		⊙	2. 3. 4.
14			⊙	4. 1. 2. 3.
15		4. 2. I.	⊙	3.
16	4.	2.	⊙	3. 1.
17	4.	3. I.	⊙	2.
18	4.	3.	⊙	2. I.
19	4.	2. 3. 1.	⊙	
20	4.		⊙	1. 3. 2. 0.
21	I. 0.	4.	⊙	2. 3.
22		2. 4. I.	⊙	3.
23		2.	⊙	3. I 6 4
24		3. I.	⊙	2. 4.
25		3.	⊙	2. I. 4.
26		3. 2. 1.	⊙	4.
27			⊙	2. 3. 1. 4.
28			⊙	2. 3. 4.
29		2. I.	⊙	3. 4.
30		2.	⊙	1. 3. 4.
31		3. I. 4.	⊙	2.

1. FEBRUARY 1789. [13]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
1	Su.	4th Sunday after Epiphany.	First Quarter - 2. 21. 25
2	M.	Purification of B.V. Mary.	Full Moon -- 9. 16. 8
3	Tu.	Blas. On mor. of Purif.	Last Quarter - 16. 10. 10
4	W.	[3 ret.	New Moon - 24. 13. 14
5	Th.	Agatha.	Other Phenomena.
6	F.		D. H. M.
7	Sa.		3. 2.38 ☾ ☿
8	Su.	Septuagesima Sunday.	5. 1.25 ☾ ☿
9	M.	In 8 days of Purif. 4 ret.	15.11 ☾ ☿
10	Tu.		6.11.39 Im. of ☿ ☿ * 3'
11	W.		S. of ☿'scent.
12	Th.	Hilary Term ends.	12.43 ¹ / ₂ Em. * 3' N.
13	F.		7. 0.54 ☾ ☿
14	Sa.	Valentine.	8.21.42 ☾ ☿ ad ☿ ☿
15	Su.	Sexagesima Sunday.	22.33 ☾ ☿ ad ☿ ☿
16	M.		9. 2.31 ☾ ☿
17	Tu.		15. 9 ☾ ☿
18	W.		23. 2 ☾ ☿
19	Th.		11.13.33 ¹ / ₂ Im. of ☿ ☿ * 9 ¹ / ₂
20	F.		S. of ☿'scent.
21	Sa.	Camb. Term div. n.	14.35 ¹ / ₄ Em. * 6 ¹ / ₂ S.
22	Su.	Quinquagesima Sunday.	13.14.46 ☾ ☿
23	M.	Pr. Octavius born.	15.12.52 ¹ / ₄ Im. of ☿ ad ☿ ☿
24	Tu.	St. Mat. Pr. Adol. Fr. born.	* 14' N. of ☿'scent.
25	W.	Ash-Wednesday.	13.21 Em. * 14 ¹ / ₂ N.
26	Th.		16. 2.50 ☾ ☿ ☿
27	F.		7.53 ☾ ☿ ☿
28	Sa.		17.15.28 ☿ enters ☿
			22.44 ☾ ☿ Serp.
			18.22.54 ☾ ☿ ad ☿ ☿
			21.12.44 ☾ ☿ ☿
			28. ☿ Stationary.

[14]		F E B R U A R Y 1789.				II.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Su.	10. 13. 10.59	21. 2.37,1	16.52.44	14. 8,7	6,8
2	M.	10. 14. 11.49	21. 6.40,4	16.35.16	14.15,5	5,9
3	Tu.	10. 15. 12.37	21.10.42,9	16.17.31	14.21,4	5,1
4	W.	10. 16. 13.22	21.14.44,6	15.59.29	14.26,5	4,2
5	Th.	10. 17. 14. 7	21.18.45,4	15.41.10	14.30,7	3,5
6	F.	10. 18. 14.50	21.22.45,4	15.22.36	14.34,2	2,6
7	Sa.	10. 19. 15.32	21.26.44,6	15. 3.46	14.36,8	1,7
8	Su.	10. 20. 16.11	21.30.42,9	14.44.41	14.38,5	1,0
9	M.	10. 21. 16.49	21.34.40,5	14.25.21	14.39,5	0,3
10	Tu.	10. 22. 17.26	21.38.37,3	14. 5.48	14.39,8	0,6
11	W.	10. 23. 18. 1	21.42.33,3	13.46. 0	14.39,2	1,3
12	Th.	10. 24. 18.35	21.46.28,5	13.25.58	14.37,9	2,1
13	F.	10. 25. 19. 8	21.50.23,0	13. 5.44	14.35,8	2,8
14	Sa.	10. 26. 19.39	21.54.16,7	12.45.17	14.33,0	3,5
15	Su.	10. 27. 20. 9	21.58. 9,8	12.24.37	14.29,5	4,2
16	M.	10. 28. 20.37	22. 2. 2,1	12. 3.45	14.25,3	4,8
17	Tu.	10. 29. 21. 6	22. 5.53,9	11.42.42	14.20,5	5,6
18	W.	11. 0.21.31	22. 9.44,8	11.21.28	14.14,9	6,2
19	Th.	11. 1.21.55	22.13.35,1	11. 0. 3	14. 8,7	6,9
20	F.	11. 2.22.19	22.17.24,7	10.38.28	14. 1,8	7,5
21	Sa.	11. 3.22.40	22.21.13,7	10.16.43	13.54,3	8,1
22	Su.	11. 4.23. 1	22.25. 2,2	9.54.48	13.46,2	8,8
23	M.	11. 5.23.19	22.28.50,0	9.32.44	13.37,4	9,3
24	Tu.	11. 6.23.36	22.32.37,2	9.10.32	13.28,1	9,9
25	W.	11. 7.23.52	22.36.23,8	8.48.11	13.18,2	10,5
26	Th.	11. 8.24. 5	22.40. 9,9	8.25.43	13. 7,7	11,0
27	F.	11. 9.24.17	22.43.55,4	8. 3. 7	12.56,7	11,6
28	Sa.	11. 10.24.26	22.47.40,3	7.40.24	12.45,1	

[16] FEBRUARY 1789. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Gr. Elong. 20^d.

1	11. 6. 37	6. 33 S	10. 19. 38	1. 51 S	16. 43 S	0. 28
4	11. 19. 38	5. 50	10. 25. 1	1. 37	14. 44	0. 37
7	0. 3. 55	4. 41	11. 0. 24	1. 18	12. 33	0. 45
10	0. 19. 32	3. 7	11. 5. 42	0. 52	10. 14	0. 53
13	1. 6. 29	1. 9 S	11. 10. 47	0. 19 S	7. 49	0. 59
16	1. 24. 34	1. 4 N	11. 15. 24	0. 19 N	5. 28	1. 4
19	2. 13. 21	3. 15	11. 19. 20	1. 1	3. 17	1. 6
22	3. 2. 15	5. 5	11. 22. 17	1. 46	1. 26	1. 4
25	3. 20. 36	6. 20	11. 23. 58	2. 29	0. 7 S	0. 58
28	4. 7. 52	6. 56	11. 24. 16	3. 6	0. 34 N	0. 46

VENUS.

1	8. 1. 17	0. 47 N	9. 13. 33	0. 25 N	22. 22 S	21. 57
7	8. 10. 49	0. 14 N	9. 20. 57	0. 7 N	21. 43	22. 5
13	8. 20. 20	0. 20 S	9. 28. 22	0. 10 S	20. 41	22. 13
19	8. 29. 50	0. 53	10. 5. 48	0. 26	19. 16	22. 21
25	9. 9. 20	1. 25	10. 13. 14	0. 41	17. 31	22. 28

MARS.

1	9. 28. 34	1. 45 S	10. 4. 35	1. 2 S	20. 9 S	23. 25
7	10. 2. 16	1. 47	10. 9. 17	1. 3	18. 58	23. 21
13	10. 6. 0	1. 49	10. 14. 0	1. 4	17. 41	23. 16
19	10. 9. 46	1. 50	10. 18. 43	1. 5	16. 16	23. 12
25	10. 13. 32	1. 51	10. 23. 27	1. 6	14. 45	23. 7

JUPITER.

1	3. 26. 20	0. 24 N	3. 22. 32	0. 29 N	22. 4 N	10. 33
7	3. 26. 49	0. 24	3. 21. 52	0. 29	22. 11	10. 6
13	3. 27. 18	0. 25	3. 21. 16	0. 30	22. 17	9. 40
19	3. 27. 48	0. 26	3. 20. 46	0. 30	22. 22	9. 15
25	3. 28. 17	0. 26	3. 20. 21	0. 31	22. 26	8. 51

SATURN.

1	11. 12. 37	1. 56 S	11. 10. 0	1. 47 S	9. 29 S	1. 46
7	11. 12. 49	1. 57	11. 10. 40	1. 47	9. 13	1. 24
13	11. 13. 1	1. 57	11. 11. 23	1. 47	8. 57	1. 3
19	11. 13. 12	1. 57	11. 12. 7	1. 47	8. 40	0. 43
25	11. 13. 24	1. 58	11. 12. 51	1. 47	8. 24	0. 23

V. FEBRUARY 1789. [17]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D.M.S.
1	Su.	0. 21.23.37	0. 27.33.32	3. 29. 32 N	3. 4.44 N
2	M.	1. 3.47.20	1. 10. 5.34	2. 37. 28	2. 7.56
3	Tu.	1. 16.28.51	1. 22.57.43	1. 36. 25	1. 3.12 N
4	W.	1. 29.32.41	2. 6.14.18	0. 28. 38 N	0. 6.54 S
5	Th.	2. 13. 2.54	2. 19.58.45	0. 42. 56 S	1.18.56
6	F.	2. 27. 2. 0	3. 4.12.36	1. 54. 20	2.28.30
7	Sa.	3. 11.30.14	3. 18.54.27	3. 0. 45	3.30.25
8	Su.	3. 26.24.26	4. 3.59.18	3. 56. 49	4.19.18
9	M.	4. 11.37.46	4. 19.18.32	4. 37. 19	4.50.24
10	Tu.	4. 27. 0. 3	5. 4.40.53	4. 58. 14	5. 0.39
11	W.	5. 12.19.26	5. 19.54.25	4. 57. 41	4.49.28
12	Th.	5. 27.24.30	6. 4.48.45	4. 36. 19	4.18.39
13	F.	6. 12. 6.18	6. 19.16.42	3. 56. 58	3.31.52
14	Sa.	6. 26.19.38	7. 3.14.55	3. 3. 53	2.33.39
15	Su.	7. 10. 2.49	7. 16.43.32	2. 1. 43	1.28.38
16	M.	7. 23.17.29	7. 29.45.11	0. 54. 55 S	0.21. 0 S
17	Tu.	8. 6. 7. 9	8. 12.24. 2	0. 12. 41 N	0.45.44 N
18	W.	8. 18.36.23	8. 24.44.52	1. 17. 51	1.48.41
19	Th.	9. 0.50. 2	9. 6.52.29	2. 18. 0	2.45.28
20	F.	9. 12.52.44	9. 18.51.16	3. 11. 1	3.34. 4
21	Sa.	9. 24.48.30	10. 0.44.52	3. 54. 46	4.12.50
22	Su.	10. 6.40.39	10. 12.36.12	4. 28. 7	4.40.26
23	M.	10. 18.31.42	10. 24.27.28	4. 49. 46	4.55.53
24	Tu.	11. 0.23.34	11. 6.20.15	4. 58. 51	4.58.32
25	W.	11. 12.17.37	11. 18.15.48	4. 54. 57	4.48. 3
26	Th.	11. 24.15. 0	0. 0.15.19	4. 38. 4	4.24.54
27	F.	0. 6.16.59	0. 12.20. 9	4. 8. 39	3.49.33
28	Sa.	0. 18.25. 6	0. 24.32. 5	3. 27. 41	3. 3.16

[18] FEBRUARY 1789. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascens. at Noon.	D's Right Ascens. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Su.	8	4. 19	18. 26	24. 27	11. 35 N	13. 29 N
2	M.	9	5. 6	30. 37	36. 58	15. 16	16. 53
3	Tu.	10	5. 56	43. 31	50. 16	18. 19	19. 33
4	W.	11	6. 49	57. 14	64. 23	20. 33	21. 16
5	Th.	12	7. 46	71. 43	79. 12	21. 41	21. 47
6	F.	13	8. 45	86. 49	94. 30	21. 32	20. 55
7	Sa.	14	9. 46	102. 14	109. 58	19. 58	18. 39
8	Su.	15	10. 45	117. 39	125. 16	17. 1	15. 5
9	M.	16	11. 43	132. 48	140. 12	12. 52	10. 27
10	Tu.	17	12. 40	147. 30	154. 42	7. 51	5. 8 N
11	W.	18	13. 34	161. 49	168. 50	2. 22 N	0. 26 S
12	Th.	19	14. 27	175. 47	182. 42	3. 12 S	5. 52
13	F.	20	15. 20	189. 34	196. 26	8. 25	10. 49
14	Sa.	21	16. 13	203. 16	210. 7	13. 2	15. 1
15	Su.	22	17. 6	216. 58	223. 49	16. 46	18. 16
16	M.	23	17. 58	230. 39	237. 28	19. 30	20. 28
17	Tu.	24	18. 50	244. 16	251. 2	21. 9	21. 33
18	W.	25	19. 41	257. 44	264. 21	21. 41	21. 33
19	Th.	26	20. 30	270. 54	277. 20	21. 10	20. 32
20	F.	27	21. 18	283. 40	289. 54	19. 40	18. 36
21	Sa.	28	22. 3	296. 1	302. 1	17. 20	15. 53
22	Su.	29	22. 47	307. 55	313. 43	14. 17	12. 33
23	M.	30	23. 29	319. 27	325. 6	10. 42	8. 44
24	Tu.	1	8	330. 42	336. 16	6. 41	4. 34
25	W.	2	0. 11	341. 48	347. 20	2. 24 S	0. 13 S
26	Th.	3	0. 53	352. 53	358. 28	1. 58 N	4. 9 N
27	F.	4	1. 35	4. 7	19. 50	6. 18	8. 24
28	Sa.	5	2. 19	15. 39	21. 35	10. 26	12. 21

VII. FEBRUARY 1789. [19]							
Days of the Month.	Days of the Week.	Semidr. ☽ at Noon.	Semidr. ☽ at Midnight.	Hor. Par. ☽ at Noon.	Hor. Par. ☽ at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Su.	15. 5	15. 10	55. 21	55. 39	5122	5098
2	M.	15. 16	15. 22	56. 0	56. 23	5071	5041
3	Tu.	15. 29	15. 36	56. 48	57. 15	5009	4975
4	W.	15. 44	15. 51	57. 43	58. 12	4940	4903
5	Th.	15. 59	16. 7	58. 41	59. 10	4867	4832
6	F.	16. 15	16. 22	59. 38	60. 5	4798	4765
7	Sa.	16. 29	16. 35	60. 29	60. 51	4736	4710
8	Su.	16. 40	16. 44	61. 10	61. 24	4687	4671
9	M.	16. 46	16. 48	61. 33	61. 38	4660	4654
10	Tu.	16. 48	16. 46	61. 38	61. 32	4654	4661
11	W.	16. 43	16. 39	61. 21	61. 6	4675	4692
12	Th.	16. 34	16. 28	60. 47	60. 24	4715	4742
13	F.	16. 21	16. 13	59. 59	59. 32	4772	4805
14	Sa.	16. 5	15. 58	59. 3	58. 35	4841	4875
15	Su.	15. 50	15. 42	58. 6	57. 38	4911	4946
16	M.	15. 35	15. 28	57. 10	56. 44	4981	5014
17	Tu.	15. 21	15. 14	56. 19	55. 57	5046	5075
18	W.	15. 9	15. 4	55. 36	55. 18	5102	5125
19	Th.	15. 0	14. 56	55. 2	54. 48	5146	5165
20	F.	14. 53	14. 50	54. 36	54. 26	5181	5194
21	Sa.	14. 48	14. 46	54. 18	54. 11	5205	5214
22	Su.	14. 45	14. 44	54. 7	54. 4	5219	5223
23	M.	14. 44	14. 44	54. 3	54. 3	5225	5225
24	Tu.	14. 44	14. 45	54. 4	54. 7	5223	5219
25	W.	14. 46	14. 47	54. 11	54. 16	5214	5207
26	Th.	14. 49	14. 51	54. 22	54. 30	5199	5189
27	F.	14. 53	14. 56	54. 39	54. 49	5177	5163
28	Sa.	14. 59	15. 3	55. 1	55. 14	5148	5130

Distances of γ 's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1	Aldebaran.	46.	16. 50	44.	45. 27	43.	13. 51	41.	42. 4	40.	10. 5	38.	37. 54	37.	5. 32	35.	32. 58
2		34.	0. 13	32.	27. 14	30.	54. 5	29.	20. 48	27.	47. 21	26.	13. 48	24.	40. 10	23.	6. 28
3		21.	32. 40														
3	Pollux.	63.	50. 8	62.	15. 7	60.	39. 47	59.	4. 9	57.	28. 12	55.	51. 57	54.	15. 24	52.	38. 34
4		51.	1. 27	49.	23. 59	47.	46. 17	46.	8. 20	44.	30. 8	42.	51. 43	41.	13. 6	39.	34. 18
5		37.	55. 19														
5	Regulus.	73.	52. 13	72.	9. 5	70.	25. 30	68.	41. 29	66.	57. 1	65.	12. 7	63.	26. 47	61.	41. 2
6		59.	54. 52	58.	8. 15	56.	21. 15	54.	33. 51	52.	46. 4	50.	57. 52	49.	9. 21	47.	20. 27
7		45.	31. 14	43.	41. 39	41.	51. 47	40.	1. 40	38.	11. 17	36.	20. 37	34.	29. 50	32.	38. 55
8	Spica π .	30.	47. 53	28.	56. 48	27.	5. 44	25.	14. 42	23.	23. 45						
8										76.	48. 31	74.	54. 26	73.	0. 13	71.	5. 50
9		69.	11. 15	67.	16. 34	65.	21. 48	63.	26. 58	61.	32. 3	59.	37. 6	57.	42. 11	55.	47. 15
10	Antares.	53.	52. 21	51.	57. 29	50.	2. 43	48.	8. 4	46.	13. 30	44.	19. 5	42.	44. 52	40.	30. 49
11		38.	36. 58	36.	43. 20	34.	49. 57	32.	56. 51	31.	4. 0	29.	11. 28	27.	19. 15	25.	27. 24
12		23.	35. 53														
12	Antares.	69.	9. 47	67.	18. 50	65.	28. 18	63.	38. 8	61.	48. 23	59.	59. 2	58.	10. 6	56.	21. 37
13		54.	33. 33	52.	45. 55	50.	58. 46	49.	12. 3	47.	25. 49	45.	40. 3	43.	54. 47	42.	10. 1
14		40.	25. 45	38.	42. 0	36.	58. 46	35.	16. 4	33.	33. 55						

Distances of γ 's Center from Sun, and from Stars west of her.																	
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
1	The Sun.	68. 15. 11	69. 39. 24	71. 3. 52	72. 28. 36	73. 53. 34	75. 18. 48	76. 44. 19	78. 10. 7								
2		79. 36. 11	81. 2. 33	82. 29. 14	83. 56. 14	85. 23. 33	86. 51. 12	88. 19. 11	89. 47. 32								
3		91. 16. 13	92. 45. 16	94. 14. 41	95. 44. 29	97. 14. 40	98. 45. 13	100. 16. 10	101. 47. 32								
4		103. 19. 17	104. 51. 28	106. 24. 5	107. 57. 7	109. 30. 34	111. 4. 26	112. 38. 45	114. 13. 29								
5		115. 48. 39	117. 24. 15	119. 0. 18	120. 36. 47												
3	α Pegasi.	57. 29. 13	59. 1. 58	60. 35. 8	62. 8. 47	63. 42. 55	65. 17. 32	66. 52. 38	68. 28. 14								
4		70. 4. 18	71. 40. 51	73. 17. 53	74. 55. 24	76. 33. 23											
4	α Arietis.	39. 36. 35	41. 18. 11	43. 0. 21	44. 43. 6	32. 56. 17	34. 35. 26	36. 15. 11	37. 55. 34								
5		53. 24. 54	55. 10. 48	56. 57. 12	58. 44. 3	46. 26. 24	48. 10. 15	49. 54. 36	51. 39. 30								
6						60. 31. 24											
6	Aldebaran.	34. 38. 30	36. 27. 41	38. 17. 20	40. 7. 26	27. 27. 19	29. 14. 16	31. 1. 45	32. 49. 49								
7		49. 24. 4	51. 16. 28	53. 9. 8	55. 2. 5	41. 58. 1	43. 48. 59	45. 40. 18	47. 32. 0								
8		64. 30. 10				56. 55. 18	58. 48. 46	60. 42. 22	62. 36. 11								
9	Pollux.	24. 4. 44	25. 49. 6	27. 34. 25	29. 20. 48	31. 8. 17	32. 56. 34	34. 45. 26	36. 34. 54								
10		38. 24. 57	40. 15. 13	42. 5. 43	43. 56. 27	45. 47. 25	47. 38. 27	49. 29. 30	51. 20. 31								
11		53. 11. 27															

[24] FEBRUARY 1789. XII.

Configurations of the SATELLITES of JUPITER
at Nine o'Clock at Night.

1		3. 4.	⊙	.1 2.
2		4. 3. 2. 1.	⊙	
3	4.		.2 .3 ⊙	1.
4	4.		.1 ⊙	.2.3
5	4.		⊙ 1.	3. 2●
6	4.	.2	⊙	3. 1.0
7		.4 3. 1.	⊙ .2	
8		3.	.4 ⊙ .1	2.
9		.3 1 0 2	⊙	.4
10		2 0 3	⊙ 1.	.4
11		.1	⊙ 2 0 3	.4
12			⊙ 1 0 2	.3 .4
13		2.	.1 ⊙	3. 4.
14	1●		3. ⊙ .2	4.
15		3.	⊙ .1	2. 4.
16		.3 1 0 2	⊙ 4.	
17		.2.3 4.	⊙ .1	
18		.4 .1	⊙ 2 0 3	
19	4.		⊙ 2. 1.	.3
20	4.	2.	.1 ⊙	3.
21	4.		⊙	1● 2.0.3●
22	4.	3.	⊙ .1	2.
23	4. 3.	1 0 2	⊙	
24		2 0 3 4.	⊙ .1	
25		.1	⊙ .4 2 0 3	
26			⊙ 1 0 2	.4.3
27		2.	.1 ⊙	3. .4
28			.2 ⊙ 1 0 3	.4

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			First Quarter — 4. 10. 51
			Full Moon — 11. 1. 50
			Last Quarter — 18. 2. 15
			New Moon — 26. 6. 46
			Other Phenomena.
			D.H.M.
1	Su.	1st Sun. in Lent. David.	2. 9. 2 ☾ ☿
2	M.	Chad.	4. 9. 3 ☾ ☿
3	Tu.		23. 19 ☾ ☿
4	W.		5. 20. 17 ☾ ☿
5	Th.		6. 10. 15 ☾ ☿
6	F.		8. ☿ ☿ d. L. 46'.
7	Sa.	Perpetua.	7. 44 Im. of 1 ad ☿ * 16 1/3
8	Su.	2d Sunday in Lent.	S. of ☿'s center.
9	M.		8. 2 1/2 Em. * 15 1/3 S.
10	Tu.		8. 27 1/2 Im. of 2 ad ☿ * 8 1/2
11	W.		N. of ☿'s center.
12	Th.	Gregory.	9. 22 Em. * 12 1/3 N.
13	F.		13. 30 1/2 Im. of ☿ * 1' N. of
14	Sa.		☿'s center.
15	Su.	3d Sunday in Lent.	14. 28 Em. * 4 1/3 N.
16	M.		9. 2. 17 ☾ ☿
17	Tu.		10. 17 ☾ ☿
18	W.	Edw. K. of W. Saxons.	11. 1. 47 ☾ ☿
19	Th.		13. 1. 12 ☾ ☿
20	F.		14. 23. 24 ☾ ☿
21	Sa.	Benedict.	15. 11. 23 ☾ ☿
22	Su.	4th Su. in Lent. Midl. Su.	16. 18 ☾ ☿
23	M.		16. Stationary.
24	Tu.		☿ ☿ d. L. 43'.
25	W.	Annun. of V. Mary.	17. ☿ ☿ d. L. 55'.
26	Th.		6. 6 ☾ ☿ Serp.
27	F.		18. 5. 49 ☾ ☿
28	Sa.		19. ☿ ☿ d. L. 15'.
29	Su.	5th Sunday in Lent.	15. 53 ☾ ☿ enters ☿
30	M.		20. 19. 10 ☾ ☿
31	Tu.		22. ☿ ☿ d. Lat. 20'.
			☿ Stationary.
			23. ☿ ☿ d. Lat. 3'.
			☿ ☿ d. Lat. 25'.
			26. ☿ ☿ d. Lat. 44'.
			29. 14. 40 ☾ ☿
			31. ☿ ☿ d. Lat. 10'.
			14. 52 ☾ ☿

[26]		M A R C H 1789.				II.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Su.	11. 11.24.34	22.51.24,7	7.17.35	12. 33,0	12,6
2	M.	11. 12.24.39	22.55. 8,6	6.54.40	12. 20,4	13,2
3	Tu.	11. 13.24.42	22.58.52,0	6.31.39	12. 7,2	13,6
4	W.	11. 14.24.42	23. 2.34,9	6. 8.33	11. 53,6	14,1
5	Th.	11. 15.24.40	23. 6.17,3	5.45.22	11. 39,5	14,5
6	F.	11. 16.24.36	23. 9.59,3	5.22. 7	11. 25,0	14,9
7	Sa.	11. 17.24.30	23.13.40,9	4.58.48	11. 10,1	15,3
8	Su.	11. 18.24.22	23.17.22,1	4.35.25	10. 54,8	15,7
9	M.	11. 19.24.12	23.21. 2,9	4.11.58	10. 39,1	16,1
10	Tu.	11. 20.23.59	23.24.43,4	3.48.28	10. 23,0	16,4
11	W.	11. 21.23.44	23.28.23,5	3.24.56	10. 6,6	16,7
12	Th.	11. 22.23.27	23.32. 3,3	3. 1.21	9.49,9	17,0
13	F.	11. 23.23. 8	23.35.42,8	2.37.44	9. 32,9	17,2
14	Sa.	11. 24.22.48	23.39.22,1	2.14. 6	9. 15,7	17,4
15	Su.	11. 25.22.26	23.43. 1,2	1.50.26	8. 58,3	17,7
16	M.	11. 26.22. 2	23.46.40,1	1.26.45	8. 40,6	17,8
17	Tu.	11. 27.21.36	23.50.18,8	1. 3. 3	8. 22,8	18,0
18	W.	11. 28.21. 8	23.53.57,3	0.39.21	8. 4,8	18,1
19	Th.	11. 29.20.39	23.57.35,7	0.15.40 NORTH.	7.46,7	18,2
20	F.	0. 0.20. 8	0. 1.13,9	0. 8. 1	7.28,5	18,4
21	Sa.	0. 1.19.35	0. 4.52,0	0.31.41	7. 10,1	18,4
22	Su.	0. 2.19. 1	0. 8.30,1	0.55.20	6. 51,7	18,5
23	M.	0. 3.18.25	0.12. 8,1	1.18.58	6. 33,2	18,5
24	Tu.	0. 4.17.47	0.15.46,1	1.42.34	5. 14,7	18,5
25	W.	0. 5.17. 7	0.19.24,1	2. 6. 7	5. 56,2	18,6
26	Th.	0. 6.16.25	0.23. 2,0	2.29.38	5. 37,6	18,6
27	F.	0. 7.15.41	0.26.40,0	2.53. 6	5. 19,0	18,5
28	Sa.	0. 8.14.55	0.30.18,0	3.16.30	5. 0,5	18,5
29	Su.	0. 9.14. 7	0.33.56,0	3.39.50	4.42,0	18,5
30	M.	0.10.13.16	0.37.34,0	4. 3. 6	4.23,5	18,4
31	Tu.	0.11.12.23	0.41.12,1	4.26.18	4. 5,1	

III. MARCH 1789. [27]

Days of the Month.	Semidia- meter of the Sun.	Time of Do- passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 10, 6	1. 5, 2	2. 30, 2	9. 996477	8. 2. 49
7	16. 9, 1	1. 4, 9	2. 29, 7	9. 997147	8. 2. 29
13	16. 7, 5	1. 4, 6	2. 29, 2	9. 997860	8. 2. 10
19	16. 5, 9	1. 4, 4	2. 28, 8	9. 998615	8. 1. 51
25	16. 4, 2	1. 4, 3	2. 28, 3	9. 999381	8. 1. 32

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
*2	7. 30. 36	*2	8. 52. 55	7	16. 46. 21 I
4	1. 59. 42	5	22. 12. 43	7	20. 16. 45 E
5	20. 28. 48	*9	11. 32. 37	14	20. 47. 52 I
*7	14. 57. 56	13	0. 52. 34	15	0. 18. 37 E
*9	9. 27. 4	*16	14. 12. 35	22	0. 49. 35 I
11	3. 56. 15	20	3. 32. 37	22	4. 20. 38 E
12	22. 25. 27	23	16. 52. 40	29	4. 51. 24 I
14	16. 54. 40	27	6. 12. 42	*29	8. 22. 44 E
*16	11. 23. 53	30	19. 32. 43	IV. Satellite.	
18	5. 53. 6			5	19. 43. 5 I
20	0. 22. 20			6	0. 4. 21 E
21	18. 51. 35			*22	17. 50. 7 I
*23	13. 20. 50			22	18. 14. 50 E
*25	7. 50. 6				
27	2. 19. 23				
28	20. 48. 39				
30	15. 17. 54				

[28] MARCH 1789. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declin- ation.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Inf. δ 8^d. 9^h $\frac{1}{2}$.

1	4. 13. 19	7. 0 N	11. 24. 4	3. 17 N	0. 39 N	0. 42
4	4. 28. 44	6. 50	11. 22. 34	3. 36	0. 21 N	0. 24
7	5. 12. 44	6. 15	11. 20. 8	3. 39	0. 34 S	0. 4
10	5. 25. 26	5. 24	11. 17. 15	3. 24	1. 55	23. 36
13	6. 7. 1	4. 24	11. 14. 30	2. 53	3. 26	23. 16
16	6. 17. 42	3. 19	11. 12. 21	2. 13	4. 53	22. 59
19	6. 27. 37	2. 12	11. 11. 2	1. 28	6. 5	22. 45
22	7. 6. 58	1. 5 N	11. 10. 38	0. 42 N	6. 56	22. 35
25	7. 15. 52	0. 0	11. 11. 5	0. 0	7. 25	22. 28
28	7. 24. 27	1. 3 S	11. 12. 17	0. 38 S	7. 33	22. 24
31	8. 2. 49	2. 3	11. 14. 9	1. 12	7. 20	22. 21

V E N U S.

1	9. 15. 39	1. 44 S	10. 18. 11	0. 50 S	16. 11 S	22. 33
7	9. 25. 8	2. 12	10. 25. 36	1. 2	13. 58	22. 40
13	10. 4. 37	2. 35	11. 3. 1	1. 12	11. 31	22. 47
19	10. 14. 5	2. 55	11. 10. 27	1. 20	8. 53	22. 53
25	10. 23. 35	3. 10	11. 17. 52	1. 25	6. 7	22. 59

M A R S.

1	10. 16. 3	1. 51 S	10. 26. 36	1. 6 S	13. 42 S	23. 4
7	10. 19. 50	1. 51	11. 1. 19	1. 6	12. 3	23. 1
13	10. 23. 38	1. 50	11. 6. 2	1. 6	10. 20	22. 57
19	10. 27. 26	1. 49	11. 10. 45	1. 6	8. 34	22. 53
25	11. 1. 15	1. 48	11. 15. 27	1. 5	6. 45	22. 48

J U P I T E R.

1	3. 28. 37	0. 27 N	3. 20. 10	0. 31 N	22. 27 N	8. 35
7	3. 29. 6	0. 27	3. 19. 57	0. 31	22. 29	8. 12
13	3. 29. 35	0. 28	3. 19. 51	0. 31	22. 30	7. 50
19	4. 0. 4	0. 29	3. 19. 52	0. 31	22. 30	7. 28
25	4. 0. 33	0. 29	3. 20. 0	0. 31	22. 29	7. 6

S A T U R N. δ 3^d. 4^h $\frac{1}{2}$.

1	11. 13. 32	1. 58 S	11. 13. 20	1. 47 S	8. 12 S	0. 10
7	11. 13. 44	1. 58	11. 14. 4	1. 48	7. 56	23. 48
13	11. 13. 55	1. 59	11. 14. 47	1. 48	7. 40	23. 28
19	11. 14. 7	1. 59	11. 15. 32	1. 48	7. 22	23. 9
25	11. 14. 19	1. 59	11. 16. 14	1. 49	7. 7	22. 50

V.		M A R C H 1789.			[29]
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Su.	1. 0.41.31	1. 6.53.41	2. 36. 33 N	2. 7.44 N
2	M.	1. 13. 9. 3	1. 19.28. 2	1. 37. 5	1. 4.55 N
3	Tu.	1. 25.51. 7	2. 2.18.47	0. 31.34 N	0. 2.38 S
4	W.	2. 8.51.32	2. 15.29.46	0. 37.14 S	1.11.50
5	Th.	2. 22.13.59	2. 29. 4.25	1. 45.56	2.19. 2.
6	F.	3. 6. 1.22	3. 13. 4.57	2. 50.35	3.20. 2
7	Sa.	3. 20.15. 3	3. 27.31.26	3. 46. 47	4.10.14
8	Su.	4. 4.53.39	4. 12.21. 4	4. 29.51	4.45. 7
9	M.	4. 19.52.46	4. 27.27.44	4. 55.35	5. 0.57
10	Tu.	5. 5. 4.36	5. 12.42. 6	5. 1. 1	4.55.43
11	W.	5. 20.18.47	5. 27.53.15	4. 45. 12	4.29.40
12	Th.	6. 5.24.13	6. 12.50.31	4. 9.34	3.45.22
13	F.	6. 20.11. 6	6. 27.25.16	3. 17.41	2.47. 9
14	Sa.	7. 4.32.23	7. 11.32.13	2. 14.25	1.40.10
15	Su.	7. 18.24.37	7. 25. 9.40	1. 5. 0 S	0.29.29 S
16	M.	8. 1.47.38	8. 8.18.51	0. 5.50 N	0.40.31 N
17	Tu.	8. 14.43.51	8. 21. 3. 7	1. 14. 8	1.46.21
18	W.	8. 27.17.19	9. 3.27. 0	2. 16.52	2.45.24
19	Th.	9. 9.32.52	9. 15.35.29	3. 11.44	3.35.39
20	F.	9. 21.35.32	9. 27.33.30	3. 57. 0	4.15.37
21	Sa.	10. 3.30. 3	10. 9.25.38	4. 31.24	4.44.11
22	Su.	10. 15.20.46	10. 21.15.52	4. 53.55	5. 0.28
23	M.	10. 27.11.20	11. 3. 7.28	5. 3.48	5. 3.52
24	Tu.	11. 9. 4.37	11. 15. 2.59	5. 0.37	4.54. 5
25	W.	11. 21. 2.48	11. 27. 4.14	4. 44.15	4.31.13
26	Th.	0. 3. 7.27	0. 9.12.32	4. 15. 3	3.55.52
27	F.	0. 15.19.38	0. 21.28.51	3. 33.51	3. 9.11
28	Sa.	0. 27.40.18	1. 3.54. 6	2. 42. 5	2.12.51
29	Su.	1. 10.10.27	1. 16.29.28	1. 41.45	1. 9. 8
30	M.	1. 22.51.25	1. 29.16.28	0. 35.21 N	0. 0.49 N
31	Tu.	2. 5.44.55	2. 12.17. 2	0. 34. 4 S	1. 8.51 S

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascens. at Noon.	D's Right Ascens. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Su.	6	3. 5	27. 38	33. 50	14. 10 N	15. 50 N
2	M.	7	3. 54	40. 11	46. 42	17. 20	18. 39
3	Tu.	8	4. 45	53. 23	60. 14	19. 45	20. 36
4	W.	9	5. 39	67. 15	74. 23	21. 11	21. 29
5	Th.	10	6. 35	81. 39	89. 1	21. 28	21. 8
6	F.	11	7. 33	96. 26	103. 52	20. 29	19. 30
7	Sa.	12	8. 31	111. 19	118. 44	18. 12	16. 35
8	Su.	13	9. 28	126. 7	133. 27	14. 41	12. 33
9	M.	14	10. 25	140. 43	147. 55	10. 11	7. 39
10	Tu.	15	11. 20	155. 4	162. 10	4. 59 N	2. 15 N
11	W.	16	12. 15	169. 14	176. 16	0. 32 S	3. 17 S
12	Th.	17	13. 9	183. 18	190. 20	5. 58	8. 32
13	F.	18	14. 4	197. 22	204. 25	10. 57	13. 10
14	Sa.	19	14. 59	211. 29	218. 34	15. 9	16. 54
15	Su.	20	15. 54	225. 38	232. 41	18. 22	19. 33
16	M.	21	16. 48	239. 42	246. 41	20. 27	21. 3
17	Tu.	22	17. 40	253. 35	260. 23	21. 22	21. 24
18	W.	23	18. 31	267. 6	273. 41	21. 9	20. 40
19	Th.	24	19. 20	280. 9	286. 29	19. 56	18. 59
20	F.	25	20. 7	292. 41	298. 46	17. 50	16. 30
21	Sa.	26	20. 52	304. 43	310. 35	15. 0	13. 21
22	Su.	27	21. 35	316. 20	322. 1	11. 34	9. 41
23	M.	28	22. 17	327. 39	333. 14	7. 42	5. 39
24	Tu.	29	22. 59	338. 48	344. 21	3. 32 S	1. 23 S
25	W.	30	23. 41	349. 55	355. 31	0. 48 N	2. 59 N
26	Th.	1	♄	1. 16	6. 54	5. 9	7. 16
27	F.	2	0. 25	12. 43	18. 39	9. 20	11. 18
28	Sa.	3	1. 11	24. 42	30. 53	13. 10	14. 55
29	Su.	4	1. 59	37. 12	43. 40	16. 29	17. 53
30	M.	5	2. 50	50. 17	57. 3	19. 5	20. 2
31	Tu.	6	3. 43	63. 57	70. 58	20. 44	21. 10

VII.		M A R C H 1789.				[31]	
Days of the Month.	Days of the Week.	Semidr. D at Noon.	Semidr. D at Midnight.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Su.	15. 7	15. 11	55. 29	55. 45	5111	5090
2	M.	15. 16	15. 21	56. 3	56. 22	5067	5042
3	Tu.	15. 27	15. 33	56. 43	57. 5	5015	4987
4	W.	15. 40	15. 47	57. 29	57. 54	4957	4926
5	Th.	15. 54	16. 1	58. 20	58. 45	4893	4863
6	F.	16. 7	16. 14	59. 10	59. 35	4832	4801
7	Sa.	16. 20	16. 26	59. 58	60. 20	4773	4747
8	Su.	16. 32	16. 36	60. 40	60. 56	4723	4704
9	M.	16. 40	16. 42	61. 9	61. 18	4689	4678
10	Tu.	16. 43	16. 43	61. 22	61. 22	4673	4673
11	W.	16. 42	16. 39	61. 16	61. 6	4680	4692
12	Th.	16. 35	16. 30	60. 52	60. 34	4709	4730
13	F.	16. 24	16. 17	60. 12	59. 46	4757	4788
14	Sa.	16. 10	16. 2	59. 19	58. 51	4821	4855
15	Su.	15. 54	15. 46	58. 22	57. 53	4891	4927
16	M.	15. 39	15. 31	57. 25	56. 57	4962	4998
17	Tu.	15. 24	15. 17	56. 31	56. 7	5031	5062
18	W.	15. 11	15. 6	55. 44	55. 24	5091	5118
19	Th.	15. 1	14. 57	55. 6	54. 51	5141	5161
20	F.	14. 53	14. 50	54. 38	54. 27	5178	5193
21	Sa.	14. 48	14. 47	54. 19	54. 14	5203	5210
22	Su.	14. 46	14. 45	54. 10	54. 8	5215	5218
23	M.	14. 45	14. 46	54. 8	54. 10	5218	5215
24	Tu.	14. 47	14. 48	54. 14	54. 20	5210	5202
25	W.	14. 50	14. 52	54. 26	54. 34	5194	5183
26	Th.	14. 55	14. 57	54. 43	54. 53	5171	5158
27	F.	15. 0	15. 4	55. 4	55. 16	5144	5128
28	Sa.	15. 7	15. 11	55. 28	55. 42	5112	5094
29	Su.	15. 15	15. 19	55. 56	56. 11	5076	5056
30	M.	15. 23	15. 27	56. 27	56. 43	5036	5015
31	Tu.	15. 32	15. 37	57. 0	57. 18	4994	4971

Distances of γ 's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1	Aldebaran.	37.	0. 33	35.	28. 41	33.	56. 40	32.	24. 31	30.	52. 14	29.	19. 52	27.	47. 28	26.	15. 3
2		24.	42. 36	23.	10. 11	21.	37. 51	20.	5. 36	18.	33. 27						
3	Pollux.	54.	40. 24	53.	6. 1	51.	31. 28	49.	56. 44	60.	55. 58	59.	22. 23	57.	48. 35	56.	14. 36
4		42.	0. 43	40.	25. 6	38.	49. 29	37.	13. 51	48.	21. 50	46.	46. 44	45.	11. 31	43.	36. 11
5		29.	16. 45							35.	38. 12	34.	2. 37	32.	27. 11	30.	51. 54
6	Regulus.	64.	42. 28	63.	0. 45	61.	18. 40	59.	36. 13	57.	53. 25	56.	10. 15	54.	26. 44	52.	42. 51
7		50.	58. 37	49.	14. 1	47.	29. 5	45.	43. 49	43.	58. 13	42.	12. 18	40.	26. 5	38.	39. 37
8		36.	52. 51	35.	5. 47	33.	18. 33	31.	31. 9	29.	43. 35	27.	55. 56	26.	8. 15	24.	20. 33
9	Spica μ .	75.	54. 19	74.	3. 12	72.	11. 49	70.	20. 9	68.	28. 13	66.	36. 2	64.	43. 37	62.	50. 59
10		60.	58. 8	59.	5. 5	57.	11. 52	55.	18. 30	53.	24. 59	51.	31. 22	49.	37. 41	47.	43. 55
11		45.	50. 4	43.	56. 10	42.	2. 16	40.	8. 22	38.	14. 29	36.	20. 39	34.	26. 53	32.	33. 14
12		30.	39. 39	28.	46. 12	26.	52. 55	24.	59. 49	23.	6. 54	21.	14. 12	19.	21. 46	17.	29. 36
13	Antares.	61.	13. 43	59.	22. 22	57.	31. 20	55.	40. 38	53.	50. 16	52.	0. 15	50.	10. 38	48.	21. 24
14		46.	32. 33	44.	44. 7	42.	56. 9	41.	8. 39	39.	21. 36	37.	35. 2	35.	49. 1	34.	3. 31
		32.	18. 34	30.	34. 11	28.	50. 26	27.	7. 17	25.	24. 46						

IX.		M A R C H 1789.										[33]	
Day.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.				
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.				
14													
15	α Aquilæ.	73. 32. 18	72. 0. 31	70. 29. 20	68. 58. 46	79. 45. 2	78. 11. 2	76. 37. 35	75. 4. 40				
16		61. 35. 42	60. 9. 11	58. 43. 26	57. 18. 28	67. 28. 49	65. 59. 30	64. 30. 53	63. 2. 57				
16	Fomal- haut.												
17		77. 33. 47	76. 8. 31	74. 43. 42	73. 19. 22	83. 19. 17	81. 52. 14	80. 25. 39	78. 59. 30				
18		66. 24. 52											
15													
16		114. 34. 24	113. 3. 25	111. 32. 51	110. 2. 40	120. 42. 29	119. 9. 50	117. 37. 36	116. 5. 47				
17		102. 37. 34	101. 9. 40	99. 42. 7	98. 14. 55	108. 32. 53	107. 3. 29	105. 34. 29	104. 5. 50				
18	The Sun.	91. 3. 46	89. 38. 28	88. 13. 27	86. 48. 41	96. 48. 3	95. 21. 31	93. 55. 17	92. 29. 22				
19		79. 48. 44	78. 25. 27	77. 2. 22	75. 39. 30	85. 24. 13	83. 59. 59	82. 36. 0	81. 12. 15				
20		68. 47. 47	67. 25. 56	66. 4. 12	64. 42. 35	74. 16. 49	72. 54. 19	71. 31. 58	70. 9. 48				
21		57. 56. 16	56. 35. 16	55. 14. 21	53. 53. 30	63. 21. 8	61. 59. 46	60. 38. 30	59. 17. 20				
22		47. 9. 58	45. 49. 21	44. 28. 46	43. 8. 11	52. 32. 42	51. 11. 58	49. 51. 15	48. 30. 36				
28	Aldeba- ran.	39. 58. 32	38. 26. 0	36. 53. 20	35. 20. 33	43. 47. 38	42. 14. 38	40. 41. 35	39. 8. 30				
29		27. 35. 22	26. 2. 14	24. 29. 9	22. 56. 5	33. 47. 38	32. 14. 38	30. 41. 35					
29													
30	Pollux.	57. 37. 55	56. 3. 56	54. 29. 52	52. 55. 41	63. 52. 35	62. 19. 7	60. 45. 31	59. 11. 47				
31		45. 3. 37	43. 29. 4	41. 54. 31	40. 19. 59	51. 21. 25	49. 47. 3	48. 12. 37	46. 38. 9				
A.1		32. 28. 45				38. 45. 27	37. 11. 3	35. 36. 48	34. 2. 42				

[34]

MARCH 1789.

X.

Distances of γ 's Center from Sun, and from Stars west of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1		49. 20. 1		50. 44. 52		52. 9. 56		53. 35. 13		55. 0. 44		56. 26. 29		57. 52. 28		59. 18. 42	
2		60. 45. 10		62. 11. 53		63. 38. 52		65. 6. 6		66. 33. 37		68. 1. 24		69. 29. 28		70. 57. 50	
3	The Sun.	72. 26. 28		73. 55. 24		75. 24. 39		76. 54. 13		78. 24. 5		79. 54. 16		81. 24. 48		82. 55. 39	
4		84. 26. 50		85. 58. 21		87. 30. 14		89. 2. 28		90. 35. 3		92. 8. 1		93. 41. 20		95. 15. 1	
5		96. 49. 6		98. 23. 32		99. 58. 21		101. 33. 33		103. 9. 7		104. 45. 4		106. 21. 24		107. 58. 7	
6		109. 35. 14		111. 12. 45		112. 50. 38		114. 28. 54		116. 7. 32		117. 46. 32		119. 25. 54		121. 5. 37	
4										42. 5. 43		43. 44. 37		45. 23. 58		47. 3. 48	
5	α Arietis.	48. 44. 5		50. 24. 49		52. 6. 0		53. 47. 38		55. 29. 42		57. 12. 13		58. 55. 10		60. 38. 32	
6		62. 22. 21		64. 6. 35		65. 51. 15		67. 36. 19		69. 21. 48							
6										36. 11. 9		37. 56. 59		39. 43. 16		41. 30. 0	
7	Aldebaran.	43. 17. 11		45. 4. 47		46. 52. 48		48. 41. 12		50. 30. 0		52. 19. 11		54. 8. 43		55. 58. 36	
8		57. 48. 50		59. 39. 23		61. 30. 14		63. 21. 22		65. 12. 49		67. 4. 31		68. 56. 28		70. 48. 39	
9		72. 41. 5															
9																	
10	Pollux.	31. 42. 4		33. 28. 40		35. 15. 53		37. 3. 44		38. 52. 13		40. 41. 12		42. 30. 35		44. 20. 22	
11		46. 10. 31		48. 0. 55		49. 51. 30		51. 42. 16		53. 33. 15		55. 24. 18		57. 15. 24		59. 6. 31	
11		60. 57. 39															
11	Regulus.	23. 57. 4		25. 47. 44		27. 38. 31		29. 29. 25		31. 20. 26		33. 11. 29		35. 2. 28		36. 53. 23	
12		38. 44. 14		40. 34. 53		42. 25. 20		44. 15. 34		46. 5. 36		47. 55. 20		49. 44. 46		51. 33. 53	

XI.		MARCH 1789.										[35]						
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.		
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		
13	Regulus.	53. 22. 43	55. 11. 12	55. 11. 12	56. 59. 20	58. 47. 5	60. 34. 29	62. 21. 28	64. 8. 3	65. 54. 14								
14		67. 40. 0	69. 25. 21		71. 10. 16	72. 54. 45	74. 38. 48											
14	Spica	27. 30. 17	29. 12. 29	29. 12. 29	30. 54. 16	32. 35. 36	34. 16. 30	22. 21. 2	24. 4. 33	25. 47. 38								
15		40. 55. 46	42. 34. 31	42. 34. 31	44. 12. 51	45. 50. 47	47. 28. 19	35. 56. 57	37. 36. 59	39. 16. 35								
16		53. 54. 35	55. 30. 12	55. 30. 12	57. 5. 28	58. 40. 24	60. 14. 58	49. 5. 27	50. 42. 13	52. 18. 35								
17		66. 30. 4						61. 49. 12	63. 23. 8	64. 56. 45								
18	Antares.	21. 33. 10	23. 3. 41	23. 3. 41	24. 34. 10	26. 4. 36	27. 35. 0	29. 5. 20	30. 35. 33	32. 5. 41								
19		33. 35. 43	35. 5. 35	35. 5. 35	36. 35. 20	38. 4. 57	39. 34. 27	41. 3. 49	42. 33. 5	44. 2. 15								
20		45. 31. 15	47. 0. 9	47. 0. 9	48. 28. 57	49. 57. 39	51. 26. 16	52. 54. 48	54. 23. 17	55. 51. 41								
21		57. 20. 1	58. 48. 17	58. 48. 17	60. 16. 30	61. 44. 40	63. 12. 48	64. 40. 55	66. 9. 1	67. 37. 6								
22		69. 5. 10	70. 33. 14	70. 33. 14	72. 1. 18	73. 29. 22	74. 57. 27	76. 25. 33	77. 53. 42	79. 21. 52								
23		80. 50. 5	82. 18. 20	82. 18. 20	83. 46. 38	85. 14. 59	86. 43. 24	88. 11. 52	89. 40. 25	91. 9. 2								
24		92. 37. 44	94. 6. 31	94. 6. 31	95. 35. 23	97. 4. 21	98. 33. 25											
29		The Sun.	42. 38. 21	44. 6. 50	44. 6. 50	45. 35. 32	47. 4. 29	48. 33. 39	50. 3. 3	51. 32. 41	53. 2. 33							
30	54. 32. 39		56. 3. 0	56. 3. 0	57. 33. 35	59. 4. 25	60. 35. 30	62. 6. 49	63. 38. 23	65. 10. 12								
31	66. 42. 16																	
AI																		

Configurations of the SATELLITES of JUPITER at
at Eight o' Clock in the Evening.

1	I.O		3.	⊙	.2		4.
2	2●		3	⊙	1.		4.
3		2	⊙ 3	⊙	.1		4.
4			1	⊙	2	⊙ 3	4
5				⊙	4.	1	⊙ 2
6			2	⊙ 4	1		3.
7		4.		.2	⊙	1	⊙ 3
8	4.		3.	.1	⊙	.2	
9	4.		3.		⊙		2● I●
10	4		3	2	⊙	.1	
11	4		1.	⊙	3	2	
12		4		⊙	.1	2.	3
13		2.	.1	⊙		3.	
14			.2	⊙	.4	1	⊙ 3
15		3.		.1	⊙	.2	4
16		3.		⊙	1	⊙ 2	4
17		2	⊙ 3	⊙	.1		4
18	3.O		1.	⊙	.2		4.
19				⊙	.1	2.	3
20			1	⊙ 2		3.	4.
21		.2		⊙	1.	3	⊙ 4
22		3.	.1	⊙	.2		
23		3.	4.		⊙	1	⊙ 2
24		4	3	2.	⊙		1.O
25	4.		1.	⊙			2.O
26	4			⊙	2.	3	
27	4		1	⊙ 2		3.	
28	4		.2	⊙	1.	3.	
29	3●	4	.1	⊙	.2		
30		3.		.4	⊙	1.	2.
31		3	2.	.1	⊙		4

[37]

A P R I L 1789.

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			First Quarter — 2. 20. 30
			Full Moon — 9. 11. 24
			Last Quarter — 16. 19. 50
			New Moon — 24. 21. 57
			Other Phenomena.
			D.H.M.
1	W.		1. 5.20 ☾ ☿ ☿
2	Th.	[Camb. Term ends	2. 2.45 ☾ ♀ ♀
3	F.	Rich. Bp. of Chichester.	3. ☿ ♀ d.L. 2',
4	Sa.	S. Ambr. Ox. T. ends.	4.16.53 ☾ ♀ ad ☿ ☿
5	Su.	Palm-Sunday.	17.47 ☾ ♀ ad ☿ ☿
6	M.		22. 0. ☾ ☿ ☿
7	Tu.		7.11.36 ½ Im. of ☿ ♀ 5' ½.
8	W.		S. of ☿'s cent.
9	Th.		12.42 Em. * 3' S.
10	F.	Good Friday.	9.12. 3 ☾ ☿ ☿
11	Sa.		11. 9.45 ☾ ♀ ad ☿ ☿
12	Su.	Easter-Day.	21.30 ☾ ☿ ☿
13	M.	Easter-Monday.	12. 2.17 ☾ ☿ ☿
14	Tu.	Easter-Tuesday.	7. 5 ☾ ☿ ☿
15	W.		13.15.10 ☾ ☿ Serp.
16	Th.		14.14.18 ☾ ♀ ad ☿ ☿
17	F.		17. 2.39 ☾ ☿ ☿
18	Sa.		19. 4.38 ☾ enters ☿
19	Su.	1st Sunday after Easter.	27.20.38 ☾ ☿ ☿
20	M.	[Alphege.	28.10.57 ☾ ☿ ☿
21	Tu.		29. 8.16 ☾ ♀ ♀
22	W.	Ox. and Cam. T. begin.	
23	Th.	St. George.	
24	F.		
25	Sa.	St. Mark. Prs. Mary born.	
26	Su.	2d Sunday after Easter.	
27	M.	From East. in 15 days,	
28	Tu.	[1 ret.	
29	W.	Easter Term begins.	
30	Th.		

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D.M. S.	M. S.	S.
1	W.	0. 12. 11. 27	0.44.50,3	4.49.25	3.46,8	18,3
2	Th.	0. 13. 10. 29	0.48.28,6	5.12.26	3.28,5	18,1
3	F.	0. 14. 9. 29	0.52. 7,0	5.35.21	3.10,4	17,9
4	Sa.	0. 15. 8. 27	0.55.45,5	5.58.11	2.52,5	17,8
5	Su.	0. 16. 7. 22	0.59.24,2	6.20.55	2.34,7	17,6
6	M.	0. 17. 6. 15	1. 3. 3,1	6.43.32	2.17,1	17,4
7	Tu.	0. 18. 5. 6	1. 6.42,1	7. 6. 2	1.59,7	17,2
8	W.	0. 19. 3. 55	1.10.21,5	7.28.25	1.42,5	17,0
9	Th.	0. 20. 2. 41	1.14. 1,0	7.50.40	1.25,5	16,7
10	F.	0. 21. 1. 25	1.17.40,8	8.12.47	1. 8,8	16,4
11	Sa.	0. 22. 0. 7	1.21.20,9	8.34.45	0.52,4	16,1
12	Su.	0. 22.58.47	1.25. 1,3	8.56.35	0.36,3	15,8
13	M.	0. 23.57.25	1.28.42,0	9.18.17	0.20,5	15,4
14	Tu.	0. 24.56. 2	1.32.23,1	9.39.50	0. 5,1	15,1
15	W.	0. 25.54.38	1.36. 4,5	10. 1.13	Su.10,0	14,7
16	Th.	0. 26.53.12	1.39.46,4	10.22.26	0.24,7	14,3
17	F.	0. 27.51.44	1.43.28,7	10.43.29	0.39,0	13,9
18	Sa.	0. 28.50.14	1.47.11,3	11. 4.22	0.52,9	13,5
19	Su.	0. 29.48.43	1.50.54,3	11.25. 5	1. 6,4	13,0
20	M.	1. 0.47.11	1.54.37,8	11.45.36	1.19,4	12,5
21	Tu.	1. 1.45.37	1.58.21,8	12. 5.55	1.31,9	12,1
22	W.	1. 2.44. 1	2. 2. 6,3	12.26. 3	1.44,0	11,6
23	Th.	1. 3.42.24	2. 5.51,2	12.45.59	1.55,6	11,1
24	F.	1. 4.40.45	2. 9.36,6	13. 5.42	2. 6,7	10,7
25	Sa.	1. 5.39. 4	2.13.22,5	13.25.12	2.17,4	10,2
26	Su.	1. 6.37.21	2.17. 8,8	13.44.29	2.27,6	9,7
27	M.	1. 7.35.36	2.20.55,6	14. 3.32	2.37,3	9,2
28	Tu.	1. 8.33.50	2.24.42,9	14.22.21	2.46,5	8,7
29	W.	1. 9.32. 1	2.28.30,8	14.40.57	2.55,2	8,1
30	Th.	1. 10.30.11	2.32.19,2	14.59.18	3. 3,3	

III. APRIL 1789. [39]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 2. 2	1. 4. 4	2. 27. 6	0. 000249	8. 1. 10
7	16. 05. 6	1. 4. 5	2. 27. 1	0. 000978	8. 0. 51
13	15. 59. 0	1. 4. 8	2. 26. 5	0. 001716	8. 0. 32
19	15. 57. 5	1. 5. 1	2. 26. 1	0. 002451	8. 0. 13
25	15. 55. 9	1. 5. 5	2. 25. 6	0. 003149	7. 29. 54

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
*1	9. 47. 11	*3	8. 52. 44	*5	8. 53. 14 I
3	4. 16. 27	6	22. 12. 41	*5	12. 24. 54 E
4	22. 45. 43	*10	11. 32. 33	*12	12. 54. 51 I
6	17. 14. 57	14	0. 52. 18	12	16. 26. 50 E
*8	11. 44. 10	17	14. 11. 58	19	16. 56. 15 I
10	6. 13. 23	21	3. 31. 31	19	20. 28. 27 E
12	0. 42. 35	24	16. 50. 56	26	20. 57. 13 I
13	19. 11. 48	28	6. 10. 15	27	0. 29. 37 E
15	13. 40. 59				
*17	8. 10. 8			IV. Satellite.	
19	2. 39. 16			*8	7. 57. 52 I
20	21. 8. 23			*8	12. 25. 37 E
22	15. 37. 29			25	2. 4. 12 I
*24	10. 6. 32			25	6. 34. 45 E
26	4. 35. 36				
27	23. 4. 36				
29	17. 33. 34				

[40]		A P R I L 1789.				IV.	
Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Méríd.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
M E R C U R Y. Gr. Elong. 4 ^d .							
1	8. 5. 35	2. 22 S	11. 14. 54	1. 21 S	7. 12 S	22. 21	
4	8. 13. 49	3. 18	11. 17. 29	1. 48	6. 36	22. 21	
7	8. 22. 4	4. 9	11. 20. 30	2. 8	5. 44	22. 22	
10	9. 0. 26	4. 56	11. 23. 54	2. 24	4. 38	22. 25	
13	9. 8. 59	5. 37	11. 27. 40	2. 35	3. 18	22. 28	
16	9. 17. 50	6. 11	0. 1. 44	2. 40	1. 46	22. 32	
19	9. 27. 5	6. 38	0. 6. 5	2. 41	0. 3 S	22. 37	
22	10. 6. 53	6. 55	0. 10. 43	2. 37	1. 51 N	22. 43	
25	10. 17. 21	7. 0	0. 15. 37	2. 28	3. 53	22. 50	
28	10. 28. 38	6. 50	0. 20. 47	2. 14	6. 3	22. 58	
30	11. 6. 42	6. 33	0. 24. 23	2. 2	7. 34	23. 3	
V E N U S.							
1	11. 4. 40	3. 20 S	11. 26. 31	1. 29 S	2. 45 S	23. 6	
7	11. 14. 10	3. 23	0. 3. 55	1. 29	0. 12 N	23. 11	
13	11. 23. 42	3. 21	0. 11. 19	1. 27	3. 9	23. 16	
19	0. 3. 14	3. 13	0. 18. 43	1. 23	6. 4	23. 21	
25	0. 12. 47	3. 0	0. 26. 7	1. 17	8. 54	23. 26	
M A R S.							
1	11. 5. 42	1. 46 S	11. 20. 56	1. 4 S	4. 35 S	22. 43	
7	11. 9. 30	1. 43	11. 25. 36	1. 3	2. 43	22. 38	
13	11. 13. 18	1. 40	0. 0. 16	1. 2	0. 51 S	22. 33	
19	11. 17. 6	1. 37	0. 4. 54	1. 0	1. 1 N	22. 28	
25	11. 20. 52	1. 33	0. 9. 31	0. 58	2. 53	22. 23	
J U P I T E R. □ 9 ^d . 20 ^h $\frac{1}{2}$.							
1	4. 1. 6	0. 30 N	3. 20. 17	0. 31 N	22. 27 N	6. 42	
7	4. 1. 35	0. 31	3. 20. 39	0. 31	22. 23	6. 22	
13	4. 2. 4	0. 31	3. 21. 7	0. 31	22. 19	6. 2	
19	4. 2. 33	0. 32	3. 21. 41	0. 32	22. 14	5. 42	
25	4. 3. 2	0. 32	3. 22. 20	0. 32	22. 8	5. 23	
S A T U R N.							
1	11. 14. 32	2. 0 S	11. 17. 4	1. 49 S	6. 47 S	22. 27	
7	11. 14. 44	2. 0	11. 17. 44	1. 50	6. 32	22. 8	
13	11. 14. 56	2. 0	11. 18. 24	1. 51	6. 18	21. 49	
19	11. 15. 8	2. 1	11. 19. 2	1. 52	6. 4	21. 29	
25	11. 15. 19	2. 1	11. 19. 38	1. 53	5. 50	21. 9	

V. A P R I L 1789. [41]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	2. 18. 53. 4	2. 25. 33. 21	1. 43. 6 S	2. 16. 19 S
2	Th.	3. 2. 18. 4	3. 9. 7. 26	2. 48. 1	3. 17. 42
3	F.	3. 16. 1. 38	3. 23. 0. 45	3. 44. 52	4. 9. 1
4	Sa.	4. 0. 4. 42	4. 7. 13. 25	4. 29. 39	4. 46. 22
5	Su.	4. 14. 26. 34	4. 21. 43. 47	4. 58. 42	5. 6. 22
6	M.	4. 29. 4. 26	5. 6. 27. 49	5. 9. 6	5. 6. 40
7	Tu.	5. 13. 53. 9	5. 21. 19. 24	4. 59. 8	4. 46. 32
8	W.	5. 28. 45. 30	6. 6. 10. 28	4. 29. 6	4. 7. 9
9	Th.	6. 13. 33. 14	6. 20. 52. 46	3. 41. 10	3. 11. 40
10	F.	6. 28. 8. 7	7. 5. 18. 33	2. 39. 18	2. 4. 43
11	Sa.	7. 12. 23. 27	7. 19. 22. 22	1. 28. 35	0. 51. 35 S
12	Su.	7. 26. 14. 58	8. 3. 1. 10	0. 14. 21 S	0. 22. 34 N
13	M.	8. 9. 40. 56	8. 16. 14. 28	0. 58. 35 N	1. 33. 19
14	Tu.	8. 22. 42. 2	8. 29. 4. 1	2. 6. 19	2. 37. 17
15	W.	9. 5. 20. 50	9. 11. 33. 0	3. 5. 54	3. 32. 0
16	Th.	9. 17. 41. 5	9. 23. 45. 39	3. 55. 20	4. 15. 48
17	F.	9. 29. 47. 17	10. 5. 46. 38	4. 33. 15	4. 47. 36
18	Sa.	10. 11. 44. 13	10. 17. 40. 41	4. 58. 46	5. 6. 42
19	Su.	10. 23. 36. 33	10. 29. 32. 23	5. 11. 19	5. 12. 38
20	M.	11. 5. 28. 41	11. 11. 25. 55	5. 10. 35	5. 5. 12
21	Tu.	11. 17. 24. 31	11. 23. 24. 52	4. 56. 29	4. 44. 27
22	W.	11. 29. 27. 18	0. 5. 32. 7	4. 29. 12	4. 10. 47
23	Th.	0. 11. 39. 34	0. 17. 49. 49	3. 49. 23	3. 25. 6
24	F.	0. 24. 3. 4	1. 0. 19. 21	2. 58. 12	2. 28. 53
25	Sa.	1. 6. 38. 51	1. 13. 1. 31	1. 57. 28	1. 24. 18
26	Su.	1. 19. 27. 29	1. 25. 56. 39	0. 49. 44 N	0. 14. 13 N
27	M.	2. 2. 29. 5	2. 9. 4. 46	0. 21. 49 S	0. 57. 52 S
28	Tu.	2. 15. 43. 40	2. 22. 25. 45	1. 33. 29	2. 8. 5
29	W.	2. 29. 11. 4	3. 5. 59. 27	2. 41. 9	3. 12. 11
30	Th.	3. 12. 51. 0	3. 19. 45. 30	3. 40. 45	4. 6. 17

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascension at Noon.	D's Right Ascension at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	7	4. 38	78. 4	85. 14	21. 17 N	21. 7 N
2	Th.	8	5. 34	92. 27	99. 41	20. 39	19. 52
3	F.	9	6. 30	106. 55	114. 7	18. 47	17. 25
4	Sa.	10	7. 26	121. 16	128. 23	15. 46	13. 52
5	Su.	11	8. 21	135. 26	142. 26	11. 45	9. 26
6	M.	12	9. 15	149. 24	156. 20	6. 58	4. 23 N
7	Tu.	13	10. 8	163. 14	170. 09	1. 44 N	0. 57 S
8	W.	14	11. 2	177. 4	184. 2	3. 37 S	6. 14
9	Th.	15	11. 57	191. 1	198. 4	8. 45	11. 7
10	F.	16	12. 52	205. 9	212. 18	13. 18	15. 16
11	Sa.	17	13. 47	219. 28	226. 40	16. 59	18. 25
12	Su.	18	14. 43	233. 52	241. 3	19. 34	20. 25
13	M.	19	15. 38	248. 11	255. 14	20. 57	21. 12
14	Tu.	20	16. 31	262. 10	269. 0	21. 10	20. 51
15	W.	21	17. 21	275. 42	282. 14	20. 16	19. 26
16	Th.	22	18. 9	288. 38	294. 52	18. 24	17. 10
17	F.	23	18. 55	300. 58	306. 56	15. 46	14. 12
18	Sa.	24	19. 39	312. 47	318. 32	12. 30	10. 41
19	Su.	25	20. 21	324. 12	329. 49	8. 46	6. 46
20	M.	26	21. 3	335. 23	340. 56	4. 42	2. 35 S
21	Tu.	27	21. 45	346. 30	352. 5	0. 26 S	1. 44 N
22	W.	28	22. 28	357. 43	3. 25	3. 54 N	6. 2
23	Th.	29	23. 13	9. 13	15. 7	8. 8	10. 10
24	F.	1	0	21. 9	27. 19	12. 6	13. 55
25	Sa.	2	0. 1	33. 39	40. 8	15. 36	17. 6
26	Su.	3	0. 52	46. 46	53. 33	18. 25	19. 30
27	M.	4	1. 45	60. 29	67. 32	20. 20	20. 53
28	Tu.	5	2. 40	74. 41	81. 53	21. 9	21. 7
29	W.	6	3. 36	89. 8	96. 22	20. 47	20. 8
30	Th.	7	4. 32	103. 35	110. 46	19. 11	17. 57

VII.		A P R I L 1789.				[43]	
Days of the Month.	Days of the Week.	Semid. Δ at Noon. M. S.	Semid. Δ at Mid-night. M. S.	Hor. Par. Δ at Noon. M. S.	Hor. Par. Δ at Midnight. M. S.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
1	W.	15. 42	15. 47	57. 36	57. 55	4949	4924
2	Th.	15. 52	15. 58	58. 14	58. 34	4901	4876
3	F.	16. 3	16. 8	58. 53	59. 12	4853	4830
4	Sa.	16. 13	16. 17	59. 29	59. 46	4809	4788
5	Su.	16. 21	16. 25	60. 1	60. 14	4770	4754
6	M.	16. 28	16. 30	60. 25	60. 33	4741	4732
7	Tu.	16. 31	16. 32	60. 38	60. 39	4725	4724
8	W.	16. 31	16. 29	60. 37	60. 31	4727	4734
9	Th.	16. 27	16. 23	60. 22	60. 9	4745	4769
10	F.	16. 19	16. 13	59. 52	59. 32	4781	4805
11	Sa.	16. 7	16. 1	59. 10	58. 46	4832	4861
12	Su.	15. 54	15. 47	58. 20	57. 54	4893	4926
13	M.	15. 39	15. 32	57. 27	57. 1	4960	4992
14	Tu.	15. 25	15. 19	56. 36	56. 13	5025	5054
15	W.	15. 13	15. 8	55. 51	55. 31	5082	5108
16	Th.	15. 3.	14. 58	55. 13	54. 57	5132	5153
17	F.	14. 55	14. 52	54. 43	54. 33	5171	5185
18	Sa.	14. 50	14. 48	54. 25	54. 20	5195	5202
19	Su.	14. 48	14. 48	54. 17	54. 17	5206	5206
20	M.	14. 48	14. 49	54. 19	54. 23	5203	5198
21	Tu.	14. 51	14. 53	54. 29	54. 37	5190	5179
22	W.	14. 55	14. 58	54. 46	54. 57	5167	5153
23	Th.	15. 2	15. 6	55. 9	55. 23	5137	5119
24	F.	15. 9	15. 13	55. 37	55. 52	5100	5081
25	Sa.	15. 17	15. 21	56. 7	56. 23	5062	5041
26	Su.	15. 26	15. 30	56. 39	56. 54	5021	5002
27	M.	15. 35	15. 39	57. 10	57. 25	4981	4962
28	Tu.	15. 43	15. 47	57. 40	57. 54	4943	4926
29	W.	15. 50	15. 54	58. 8	58. 21	4908	4892
30	Th.	15. 57	16. 1	58. 34	58. 46	4876	4861

IX.		A P R I L 1789.								[45]
Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.		
Days.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		
14										
15	75. 1. 20	73. 31. 1	72. 1. 3	70. 31. 25	81. 6. 4	79. 34. 21	78. 3. 0	76. 31. 59		
16	63. 8. 18	61. 40. 40	60. 13. 20	58. 46. 21	69. 2. 8	67. 33. 11	66. 4. 33	64. 36. 16		
17	51. 36. 24				57. 19. 42	55. 53. 23	54. 27. 23	53. 1. 43		
18	122. 12. 32	120. 43. 45	119. 15. 20	117. 47. 15	116. 19. 32	114. 52. 9	113. 25. 5	111. 58. 21		
19	110. 31. 55	109. 5. 48	107. 39. 58	106. 14. 26	104. 49. 11	103. 24. 12	101. 59. 29	100. 35. 1		
20	99. 10. 49	97. 46. 50	96. 23. 5	94. 59. 32	93. 36. 13	92. 13. 6	90. 50. 10	89. 27. 24		
21	88. 4. 49	86. 42. 23	85. 20. 5	83. 57. 56	82. 35. 55	81. 14. 2	79. 52. 15	78. 30. 34		
22	77. 8. 59	75. 47. 29	74. 26. 2	73. 4. 39	71. 43. 20	70. 22. 3	69. 0. 49	67. 39. 35		
23	66. 18. 23	64. 57. 11	63. 35. 58	62. 14. 45	60. 53. 31	59. 32. 15	58. 10. 57	56. 49. 36		
24	55. 28. 12	54. 6. 44	52. 45. 12	51. 23. 35	50. 1. 54	48. 40. 7	47. 18. 14	45. 56. 15		
25	44. 34. 9	43. 11. 56	41. 49. 36	40. 27. 7	39. 4. 31					
26										
27	48. 14. 32	46. 38. 44	45. 2. 57	43. 27. 11	54. 37. 8	53. 1. 36	51. 25. 59	49. 50. 18		
28	35. 29. 34	33. 54. 37	32. 20. 2	30. 45. 48	41. 51. 27	40. 15. 43	38. 40. 10	37. 4. 47		
29										
30	57. 47. 29	56. 6. 13	54. 24. 48	52. 43. 15	64. 31. 8	62. 50. 27	61. 9. 36	59. 28. 37		
31	44. 13. 33	42. 31. 17	40. 48. 58	39. 6. 34	51. 1. 34	49. 19. 44	47. 37. 47	45. 55. 43		
MI	30. 33. 56				37. 24. 6	35. 41. 36	33. 59. 4	32. 16. 31		

[46] A P R I L 1789. X.																	
Distances of γ 's Center from Sun, and from Stars west of her.																	
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
1	The Sun.	66. 42. 16	68. 14. 37	69. 47. 13	71. 20. 5	72. 53. 12	74. 26. 35	76. 0. 14	77. 34. 10								
2		79. 8. 21	80. 42. 49	82. 17. 34	83. 52. 35	85. 27. 53	87. 3. 28	88. 39. 20	90. 15. 28								
3		91. 51. 54	93. 28. 37	95. 5. 37	96. 42. 53	98. 20. 26	99. 58. 16	101. 36. 22	103. 14. 45								
4		104. 53. 25	106. 32. 22	108. 11. 34	109. 51. 3	111. 30. 47	113. 10. 46	114. 51. 0	116. 31. 29								
5		118. 12. 12	119. 53. 10	121. 34. 20													
3	Aldeba- ran.	39. 5. 9	40. 48. 33	42. 32. 17	44. 16. 21	46. 0. 44	47. 45. 26	49. 30. 27	51. 15. 46								
4		53. 1. 24	54. 47. 20	56. 33. 34	58. 20. 5	60. 6. 53	61. 53. 58	63. 41. 18	65. 28. 54								
5		67. 16. 45															
5	Pollux.	26. 44. 54	28. 27. 35	30. 5. 15	31. 46. 52	33. 29. 25	35. 12. 46	36. 56. 48	38. 41. 29								
6		40. 26. 50	42. 12. 35	43. 58. 46	45. 45. 22	47. 32. 23	49. 19. 44	51. 7. 20	52. 55. 11								
7		54. 43. 17															
7	Regulus.	17. 48. 28	19. 34. 34	21. 21. 16	23. 8. 35	24. 56. 31	26. 44. 55	28. 33. 37	30. 22. 38								
8		32. 11. 57	34. 1. 19	35. 50. 47	37. 40. 18	39. 29. 55	41. 19. 29	43. 9. 0	44. 58. 27								
9		46. 47. 50	48. 37. 6	50. 26. 12	52. 15. 10	54. 3. 58	55. 52. 34	57. 40. 57	59. 29. 6								
10		61. 17. 1	63. 4. 40	64. 52. 1	66. 39. 6	68. 25. 53	70. 12. 22	71. 58. 32	73. 44. 21								
11		75. 29. 51															
11	Spica α	21. 28. 29	23. 14. 1	24. 59. 12	26. 44. 1	28. 28. 27	30. 12. 31	31. 56. 12	33. 39. 29								
12		35. 22. 24	37. 4. 55	38. 47. 2	40. 28. 45	42. 10. 4	43. 50. 58	45. 31. 28	47. 11. 31								

XI.

A P R I L 1789.

[47]

Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
Days.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
13 Spica π	48. 51. 15	50. 30. 33	52. 9. 27	53. 47. 57	55. 26. 4	57. 3. 48	58. 41. 9	60. 18. 8
14	61. 54. 44	63. 30. 58	65. 6. 51	66. 42. 23	68. 17. 33			
15	29. 29. 56	31. 1. 56	32. 33. 46	34. 5. 26	23. 20. 38	24. 53. 9	26. 25. 32	27. 57. 48
16	41. 41. 1	43. 11. 34	44. 41. 56	46. 12. 7	35. 36. 57	37. 8. 15	38. 39. 21	40. 10. 17
17 Antares,	53. 40. 35	55. 9. 50	56. 38. 58	58. 7. 59	47. 42. 8	49. 11. 58	50. 41. 40	52. 11. 12
18	65. 31. 27	66. 59. 54	68. 28. 17	69. 56. 37	59. 36. 52	61. 5. 39	62. 34. 20	64. 2. 56
19	77. 17. 45	78. 45. 56	80. 14. 9	81. 42. 22	71. 24. 54	72. 53. 8	74. 21. 22	75. 49. 34
20	89. 3. 57	90. 32. 25	92. 0. 58	93. 29. 36	83. 10. 36	84. 38. 52	86. 7. 11	87. 35. 32
21	51. 55. 47	53. 11. 56	54. 28. 38	55. 45. 55	46. 57. 50	48. 11. 18	49. 25. 27	50. 40. 17
22	62. 19. 50	63. 39. 59	65. 0. 32	66. 21. 29	57. 3. 45	58. 22. 4	59. 40. 51	61. 0. 6
23	73. 11. 43	74. 34. 47	75. 58. 8	77. 21. 48	67. 42. 50	69. 4. 33	70. 26. 35	71. 48. 59
28	37. 11. 31	38. 44. 41	40. 18. 2	41. 51. 36	78. 45. 45			
29	49. 42. 15	51. 16. 55	52. 51. 45	54. 26. 47	43. 25. 21	44. 59. 18	46. 33. 26	48. 7. 45
30	62. 24. 32	64. 0. 35	65. 36. 47	67. 13. 9	56. 1. 58	57. 37. 21	59. 12. 55	60. 48. 38
MI	75. 17. 25				68. 49. 41	70. 26. 22	72. 3. 14	73. 40. 14

Configurations of the SATELLITES of JUPITER
at Nine o' Clock in the Evening.

1	10 2.0	.3	○						
2			○	.1	.3			.4	
3		1.2.	○			3			.4
4		.2	○		.1	3.			4.
5	3●		.1	○		.2			4.
6		3.		○	1 0 2			4.	
7		.3	2.	.1	○		4.		
8	10 4●		.3	.2	○				
9		4.			○	.1	.3	.2	
10	2● 4.		1.		○			.3	
11	4.		.2		○	.1		3.	
12	.4		.1		○	.2			3●
13	.4		3.		○	1.2.			
14		.4	.3	2.	.1	○			
15			3 0 4	.2	○	1.			
16	1.0				○	.4	.3	.2	
17	2●		1.		○			4	.3
18			.2		○	.1		3.	.4
19			1.		○	.2			.4
20			3.		○	1.2.			.4
21			.3	2.	.1	○			4.
22			.3	.2		○	1.		4.
23					.1	○	.3	.2	4.
24	1●				○	2 0 4			.3
25			2.4.		○	.1		3.	
26		4.		1.	○	.2	3.		
27	4.		3.		○	.1	2.		
28	4.		3.	2.	.1	○			
29	.4		.3	.2		○	1.		
30	.4			.1		○	.2		3.0

I. M A Y 1789. [49]		
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.
1	F.	<i>St. Philip and St. James.</i>
2	Sa.	
3	Su.	[the Crofs. <i>3d Su. aft. East. Inven. of</i>
4	M.	
5	Tu.	<i>From East. in 3 w. 2 ret.</i>
6	W.	
7	Th.	<i>John Ev. ante Port Lat.</i>
8	F.	
9	Sa.	
10	Su.	
11	M.	<i>4th Sunday after Easter.</i>
12	Tu.	
13	W.	[3 ret.
14	Th.	
15	F.	
16	Sa.	
17	Su.	<i>5th Su. aft. East. Rog. Su.</i>
18	M.	
19	Tu.	<i>From East. in 5 w. 4 ret.</i>
20	W.	
21	Th.	<i>2. Ch. born. 1744. Dunst.</i>
22	F.	
23	Sa.	<i>Ascension-day. H Thurs.</i>
24	Su.	
25	M.	<i>Prs. Eliz. born. 1770. On</i>
26	Tu.	
27	W.	[mor. of Asc. 5 ret.
28	Th.	
29	F.	
30	Sa.	
31	Su.	<i>Whit-Sunday. Cam. Ter.</i> [div. m.]

Phases of the Moon.

D. H. M.

First Quarter — 2. 3. 2

Full Moon — 8. 21. 22

Last Quarter — 16. 13. 44

New Moon — 24. 10. 20

First Quarter — 31. 7. 44

Other Phenomena.

D. H. M.

1. 22. 59 ☾ 1 ad α ♄

23. 54 ☾ 2 ad α ♄

2. 4. 11 ☾ ♄

4. ☿ ♄ d. L. 42'

20. 9 ☾ e ♄

6. 21. 19 ☾ α ♄

8. ☾ ecl. invisible.

19. 37 ☾ 1 ad α ♄

9. 7. 22 ☾ ♄

12. 8 ☾ λ ♄

16. 56 ☾ β ♄

11. 0. 44 ☾ p Serp.

23. 32 ☾ 1 ad μ ♄

14. 10. 57 ☾ β ♄

20. 5. 13 ☾ enters ♄

24. ☾ ecl. invisible.

26. 14. 42 ☾ v ♄

28. ☿ 125 8 d. L. 33'

29. ☿ 132 8 d. L. 54'

4. 25 ☾ 1 ad α ♄

5. 19 ☾ 2 ad α ♄

9. 35 ☾ ♄

[50]		M A Y 1789.				II.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time Sub.	Diff.
		S. D.M.S.	H. M. S.	D. M. S.	M. S.	S.
1	F.	1. 11.28.19	2. 36. 8,1	15.17.24	3.10,9	7,1
2	Sa.	1. 12.26.25	2. 39.57,5	15.35.15	3.18,0	6,6
3	Su.	1. 13.24.29	2. 43.47,5	15.52.50	3.24,6	6,0
4	M.	1. 14.22.30	2. 47.38,0	16.10. 9	3.30,6	5,5
5	Tu.	1. 15.20.29	2. 51.29,0	16.27.12	3.36,1	5,0
6	W.	1. 16.18.27	2. 55.20,5	16.43.59	3.41,1	4,4
7	Th.	1. 17.16.23	2. 59.12,6	17. 0.30	3.45,5	3,9
8	F.	1. 18.14.17	3. 3. 5,3	17.16.43	3.49,4	3,3
9	Sa.	1. 19.12.10	3. 6.58,6	17.32.39	3.52,7	2,7
10	Su.	1. 20.10. 1	3. 10.52,4	17.48.17	3.55,4	2,1
11	M.	1. 21. 7.51	3. 14.46,8	18. 3.38	3.57,5	1,6
12	Tu.	1. 22. 5.39	3. 18.41,8	18.18.41	3.59,1	1,0
13	W.	1. 23. 3.26	3. 22.37,4	18.33.25	4. 0,1	0,4
14	Th.	1. 24. 1.12	3. 26.33,5	18.47.50	4. 0,5	C, 2
15	F.	1. 24.58.57	3. 30.30,3	19. 1.57	4. 0,3	0,8
16	Sa.	1. 25.56.41	3. 34.27,7	19.15.45	3.59,5	1,4
17	Su.	1. 26.54.24	3. 38.25,7	19.29.14	3.58,1	2,0
18	M.	1. 27.52. 6	3. 42.24,3	19.42.23	3.56,1	2,6
19	Tu.	1. 28.49.47	3. 46.23,4	19.55.12	3.53,5	3,2
20	W.	1. 29.47.27	3. 50.23,1	20. 7.40	3.50,3	3,7
21	Th.	2. 0.45. 6	3. 54.23,3	20.19.48	3.46,6	4,2
22	F.	2. 1.42.44	3. 58.24,1	20.31.35	3.42,4	4,8
23	Sa.	2. 2.40.22	4. 2.25,5	20.43. 1	3.37,6	5,3
24	Su.	2. 3.37.59	4. 6.27,5	20.54. 6	3.32,3	5,8
25	M.	2. 4.35.34	4. 10.29,9	21. 4.49	3.26,5	6,3
26	Tu.	2. 5.33. 7	4. 14.32,7	21.15.10	3.20,2	6,8
27	W.	2. 6.30.39	4. 18.36,0	21.25.10	3.13,4	7,2
28	Th.	2. 7.28.10	4. 22.39,8	21.34.48	3. 6,2	7,7
29	F.	2. 8.25.40	4. 26.44,1	21.44. 2	2.58,5	8,1
30	Sa.	2. 9.23. 9	4. 30.48,7	21.52.54	2.50,4	8,5
31	Su.	2. 10.20.36	4. 34.53,8	22. 1.24	2.41,9	

III. M A Y 1789. [51]

Days of the Month.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node,
	M. S.	M. S.	M. S.		S. D. M.
1	15. 54, 5	1. 5, 9	2. 25, 3	0. 003787	7. 29. 35
7	15. 53, 1	1. 6, 4	2. 24, 9	0. 004380	7. 29. 16
13	15. 51, 9	1. 6, 9	2. 24, 6	0. 004947	7. 28. 57
19	15. 50, 8	1. 7, 4	2. 24, 2	0. 005479	7. 28. 38
25	15. 49, 8	1. 7, 9	2. 23, 9	0. 005941	7. 28. 18

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
*1	12. 2. 34	1	19. 29. 28	4	0. 57. 51 I
3	6. 31. 29	*5	8. 48. 28	4	4. 30. 27 E
5	1. 0. 23	8	22. 7. 15	11	4. 57. 55 I
6	19. 29. 16	*12	11. 25. 53	11	8. 30. 44 E
8	13. 58. 5	16	0. 44. 21	*18	8. 57. 28 I
10	8. 26. 54	19	14. 2. 40	18	12. 30. 27 E
12	2. 55. 41	23	3. 20. 48	25	12. 56. 25 I
13	21. 24. 25	26	16. 38. 45	25	16. 29. 33 E
15	15. 53. 9	30	5. 56. 34	IV. Satellite.	
*17	10. 21. 50			11	20. 8. 18 I
19	4. 50. 29			12	0. 41. 21 E
20	23. 19. 7			28	14. 9. 14 I
22	17. 47. 42			28	18. 44. 36 E
24	12. 16. 16				
26	6. 44. 49				
28	1. 13. 20				
29	19. 41. 49				
31	14. 10. 18				

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lat- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Sup. $\delta 15^{\circ} 1\frac{1}{2}^h$.

1	11. 10. 54	6. 21 S	0. 26. 13	1. 55 S	8. 20 N	23. 7
4	11. 24. 20	5. 29	1. 1. 56	1. 33	10. 42	23. 17
7	0. 9. 4	4. 12	1. 7. 55	1. 6	13. 7	23. 28
10	0. 25. 8	2. 29	1. 14. 8	0. 37	15. 30	23. 41
13	1. 12. 30	0. 25 S	1. 20. 33	0. 6 S	17. 49	23. 55
16	2. 0. 53	1. 50 N	1. 27. 6	0. 26 N	19. 57	0. 4
19	2. 19. 48	3. 55	2. 3. 40	0. 56	21. 49	0. 20
22	3. 8. 35	5. 35	2. 10. 7	1. 22	23. 20	0. 35
25	3. 26. 36	6. 37	2. 16. 21	1. 43	24. 28	0. 49
28	4. 13. 27	7. 0	2. 22. 17	1. 58	25. 12	1. 3
31	4. 28. 50	6. 49	2. 27. 51	2. 6	25. 33	1. 16

V E N U S. Sup. $\delta 30^{\circ} 19\frac{3}{4}^h$.

1	0. 22. 21	2. 42 S	1. 3. 30	1. 8 S	11. 37 N	23. 31
7	1. 1. 56	2. 18	1. 10. 53	0. 58	14. 11	23. 36
13	1. 11. 32	1. 52	1. 18. 16	0. 47	16. 32	23. 42
19	1. 21. 10	1. 22	1. 25. 38	0. 34	18. 38	23. 48
25	2. 0. 48	0. 49	2. 3. 1	0. 20	20. 27	23. 55

M A R S.

1	11. 24. 38	1. 29 S	0. 14. 7	0. 56 S	4. 43 N	22. 16
7	11. 28. 23	1. 25	0. 18. 41	0. 54	6. 30	22. 10
13	0. 2. 7	1. 20	0. 23. 14	0. 51	8. 15	22. 4
19	0. 5. 50	1. 15	0. 27. 45	0. 48	9. 56	21. 57
25	0. 9. 31	1. 9	1. 2. 14	0. 45	11. 33	21. 50

J U P I T E R.

1	4. 3. 31	0. 33 N	3. 23. 5	0. 32 N	22. 0 N	5. 3
7	4. 4. 0	0. 34	3. 23. 54	0. 32	21. 52	4. 44
13	4. 4. 29	0. 34	3. 24. 47	0. 32	21. 43	4. 24
19	4. 4. 58	0. 35	3. 25. 44	0. 32	21. 33	4. 4
25	4. 5. 26	0. 35	3. 26. 45	0. 32	21. 21	3. 45

S A T U R N.

1	11. 15. 31	2. 1 S	11. 20. 12	1. 54 S	5. 38 S	20. 48
7	11. 15. 43	2. 1	11. 20. 44	1. 55	5. 27	20. 27
13	11. 15. 55	2. 2	11. 21. 13	1. 56	5. 16	20. 5
19	11. 16. 7	2. 2	11. 21. 40	1. 58	5. 7	19. 43
25	11. 16. 18	2. 2	11. 22. 4	1. 59	4. 59	19. 20

V.		M A Y 1789.				[53]
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.	
		S. D. M. S.	S. D. M. S.	D.M. S.	D.M.S.	
1	F.	3. 26.42.58	4. 3.43.18	4.28.24 S	4.46.40 S	
2	Sa.	4. 10.46.17	4. 17.51.45	5. 0.45	5.10.20	
3	Su.	4. 24.59.27	5. 2. 9. 4	5.15.13	5.15.14	
4	M.	5. 9.20. 9	5.16.32.22	5.10.20	5. 0.32	
5	Tu.	5. 23.45. 9	6. 0.57.57	4.45.58	4.26.54	
6	W.	6. 8.10. 9	6. 15.21.10	4. 3.35	3.36.32	
7	Th.	6. 22.30.16	6. 29.36.57	3. 6. 8	2.33. 3	
8	F.	7. 6.40.32	7. 13.40.31	1.57.47	1.21. 3	
9	Sa.	7. 20.36.28	7. 27.27.54	0.43.26 S	0. 5.35 S	
10	Su.	8. 4.14.37	8. 10.56.22	0.31.56 N	1. 8.33 N	
11	M.	8. 17.35. 3	8. 24. 4.41	1.43.46	2.17.12	
12	Tu.	9. 0.31.20	9. 6.53.11	2.48.24	3.17.10	
13	W.	9. 13.10.30	9. 19.23.34	3.43. 8	4. 6.13	
14	Th.	9. 25.32.49	10. 1.38.43	4.26. 9	4.42.55	
15	F.	10. 7.41.39	10. 13.42.12	4.56.21	5. 6.29	
16	Sa.	10. 19.40.56	10. 25.38.22	5.13.12	5.16.33	
17	Su.	11. 1.35. 4	11. 7.31.38	5.16.30	5.13. 4	
18	M.	11. 13.28.41	11. 19.26.41	5. 6.17	4.56.11	
19	Tu.	11. 25.26.16	0. 1.27.52	4.42.48	4.26.15	
20	W.	0. 7.32. 1	0. 13.39. 9	4. 6.36	3.43.59	
21	Th.	0. 19.49.39	0. 26. 3.53	3.18.34	2.50.31	
22	F.	1. 2.22. 5	1. 8.44.31	2.20. 8	1.47.36	
23	Sa.	1. 15.11.19	1. 21.42.32	1.13.24	0.37.48 N	
24	Su.	1. 28.18.13	2. 4.58.15	0. 1.21 N	0.35.33 S	
25	M.	2. 11.42.32	2. 18.30.49	1.12.20 S	1.48.26	
26	Tu.	2. 25.22.53	3. 2.18.19	2.23.19	2.56.20	
27	W.	3. 9.16.50	3. 16.17.58	3.26.58	3.54.41	
28	Th.	3. 23.21.18	4. 0.26.25	4.18.57	4.39.23	
29	F.	4. 7.32.50	4. 14.40.11	4.55.34	5. 7.15	
30	Sa.	4. 21.48. 0	4. 28.55.58	5.14.12	5.16.20	
31	Su.	5. 6. 3.38	5. 13.10.46	5.13.36	5. 6. 1	

[54]		M A Y 1789.					VI.
Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascens. at Noon.	D's Right Ascens. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	F.	8	5. 27	117. 52	124. 53	16. 26 N	14. 41 N
2	Sa.	9	6. 21	131. 50	138. 42	12. 43	10. 34
3	Su.	10	7. 13	145. 30	152. 15	8. 15	5. 49
4	M.	11	8. 5	158. 58	165. 40	3. 17 N	0. 42 N
5	Tu.	12	8. 57	172. 22	179. 6	1. 54 S	4. 28 S
6	W.	13	9. 49	185. 53	192. 43	6. 59	9. 23
7	Th.	14	10. 43	199. 38	206. 37	11. 39	13. 44
8	F.	15	11. 38	213. 40	220. 47	15. 37	17. 15
9	Sa.	16	12. 33	227. 58	235. 10	18. 38	19. 43
10	Su.	17	13. 28	242. 22	249. 32	20. 30	20. 59
11	M.	18	14. 22	256. 38	263. 39	21. 10	21. 3
12	Tu.	19	15. 14	270. 33	277. 19	20. 39	20. 0
13	W.	20	16. 4	283. 56	290. 23	19. 7	18. 0
14	Th.	21	16. 51	296. 41	302. 49	16. 41	15. 13
15	F.	22	17. 36	308. 48	314. 41	13. 35	11. 50
16	Sa.	23	18. 19	320. 26	326. 7	9. 58	8. 1
17	Su.	24	19. 0	331. 43	337. 17	5. 59	3. 54 S
18	M.	25	19. 42	342. 49	348. 22	1. 47 S	0. 22 N
19	Tu.	26	20. 25	353. 56	359. 34	2. 31 N	4. 41
20	W.	27	21. 9	5. 16	11. 5	6. 46	8. 50
21	Th.	28	21. 56	17. 2	23. 7	10. 50	12. 44
22	F.	29	22. 45	29. 21	35. 45	14. 30	16. 8
23	Sa.	30	23. 37	42. 20	49. 6	17. 35	18. 49
24	Su.	1	0	56. 3	63. 8	19. 49	20. 34
25	M.	2	0. 32	70. 22	77. 41	21. 1	21. 10
26	Tu.	3	1. 29	85. 3	92. 27	21. 0	20. 30
27	W.	4	2. 26	99. 51	107. 11	19. 42	18. 35
28	Th.	5	3. 22	114. 27	121. 37	17. 11	15. 32
29	F.	6	4. 17	128. 40	135. 37	13. 38	11. 33
30	Sa.	7	5. 10	142. 28	149. 13	9. 18	6. 55
31	Su.	8	6. 1	155. 54	162. 33	4. 26	1. 54

VII.		M A Y 1789.				[55]	
Days of the Month.	Days of the Week.	Semid. Δ at Noon. M. S.	Semid. Δ at Mid-night. M. S.	Hor. Par. Δ at Noon. M. S.	Hor. Par. Δ at Midnight. M. S.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
1	F.	16. 4	16. 7	58. 58	59. 8	4846	4834
2	Sa.	16. 10	16. 12	59. 18	59. 27	4822	4811
3	Su.	16. 14	16. 16	59. 34	59. 41	4802	4794
4	M.	16. 17	16. 18	59. 45	59. 48	4789	4786
5	Tu.	16. 18	16. 18	59. 49	59. 48	4784	4786
6	W.	16. 17	16. 15	59. 44	59. 39	4790	4797
7	Th.	16. 13	16. 10	59. 31	59. 19	4806	4821
8	F.	16. 6	16. 2	59. 5	58. 50	4838	4856
9	Sa.	15. 57	15. 52	58. 33	58. 14	4877	4901
10	Su.	15. 46	15. 40	57. 53	57. 31	4927	4955
11	M.	15. 34	15. 28	57. 9	56. 47	4983	5010
12	Tu.	15. 23	15. 17	56. 26	56. 5	5037	5064
13	W.	15. 12	15. 7	55. 45	55. 27	5090	5114
14	Th.	15. 2	14. 58	55. 11	54. 57	5134	5153
15	F.	14. 55	14. 53	54. 46	54. 36	5167	5181
16	Sa.	14. 51	14. 49	54. 29	54. 24	5190	5197
17	Su.	14. 49	14. 49	54. 22	54. 23	5199	5198
18	M.	14. 50	14. 52	54. 26	54. 32	5194	5186
19	Tu.	14. 54	14. 57	54. 40	54. 50	5175	5162
20	W.	15. 0	15. 4	55. 2	55. 16	5146	5128
21	Th.	15. 8	15. 13	55. 32	55. 49	5107	5085
22	F.	15. 17	15. 22	56. 7	56. 26	5062	5037
23	Sa.	15. 28	15. 33	56. 45	57. 5	5013	4987
24	Su.	15. 38	15. 43	57. 24	57. 42	4964	4941
25	M.	15. 48	15. 53	58. 0	58. 16	4918	4898
26	Tu.	15. 57	16. 1	58. 31	58. 45	4880	4863
27	W.	16. 4	16. 7	58. 57	59. 7	4848	4835
28	Th.	16. 9	16. 10	59. 15	59. 21	4826	4819
29	F.	16. 11	16. 12	59. 25	59. 28	4813	4810
30	Sa.	16. 13	16. 13	59. 29	59. 29	4809	4809
31	Su.	16. 12	16. 12	59. 28	59. 26	4810	4812

IX. MAY 1789. [57]

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
15	α Arietis.	86. 13. 26	84. 44. 14	84. 58. 25	83. 15. 12	81. 46. 17	80. 17. 31	78. 48. 53	77. 20. 21	75. 51. 57							
16		74. 23. 39	72. 55. 27		71. 27. 21	69. 59. 20	68. 31. 24										
13	The Sun.	118. 22. 48	116. 58. 25	115. 34. 13	114. 10. 15	112. 46. 29	111. 22. 55	109. 59. 33	108. 36. 21	107. 13. 20	105. 50. 29	104. 27. 46	103. 5. 12	102. 17. 31	100. 20. 28	98. 58. 17	97. 36. 10
14		107. 13. 20	105. 50. 29	104. 27. 46	103. 5. 12	102. 17. 31	100. 20. 28	98. 58. 17	97. 36. 10	96. 14. 11	94. 52. 17	93. 30. 27	92. 8. 41	90. 46. 59	89. 25. 20	88. 3. 43	86. 42. 6
15		96. 14. 11	94. 52. 17	93. 30. 27	92. 8. 41	90. 46. 59	89. 25. 20	88. 3. 43	86. 42. 6	85. 20. 31	83. 58. 57	82. 37. 22	81. 15. 47	79. 54. 10	78. 32. 31	77. 10. 48	75. 49. 3
16		85. 20. 31	83. 58. 57	82. 37. 22	81. 15. 47	79. 54. 10	78. 32. 31	77. 10. 48	75. 49. 3	74. 27. 14	73. 5. 21	71. 43. 23	70. 21. 19	68. 59. 10	67. 36. 54	66. 14. 30	64. 51. 59
17		74. 27. 14	73. 5. 21	71. 43. 23	70. 21. 19	68. 59. 10	67. 36. 54	66. 14. 30	64. 51. 59	63. 29. 20	62. 6. 33	60. 43. 36	59. 20. 30	57. 57. 14	56. 33. 47	55. 10. 9	53. 46. 19
18		63. 29. 20	62. 6. 33	60. 43. 36	59. 20. 30	57. 57. 14	56. 33. 47	55. 10. 9	53. 46. 19	52. 22. 17	50. 58. 3	49. 33. 35	48. 8. 55	46. 44. 8	45. 18. 53	43. 53. 31	42. 27. 54
19		52. 22. 17	50. 58. 3	49. 33. 35	48. 8. 55	46. 44. 8	45. 18. 53	43. 53. 31	42. 27. 54	41. 2. 3							
20		41. 2. 3															
21																	
26	Regulus.	61. 34. 36	59. 51. 29	58. 8. 13	56. 24. 47	54. 41. 12	52. 57. 29	51. 13. 39	49. 29. 43	47. 45. 40	46. 1. 33	44. 17. 22	42. 33. 9	40. 48. 52	39. 4. 32	37. 20. 14	35. 35. 58
27		47. 45. 40	46. 1. 33	44. 17. 22	42. 33. 9	40. 48. 52	39. 4. 32	37. 20. 14	35. 35. 58	33. 51. 44	32. 7. 31	30. 23. 27	28. 39. 35	26. 55. 53	25. 12. 28	23. 29. 26	21. 46. 47
28		33. 51. 44	32. 7. 31	30. 23. 27	28. 39. 35	26. 55. 53	25. 12. 28	23. 29. 26	21. 46. 47	20. 4. 30							
29	Spica ηγ	20. 4. 30															
29		73. 15. 25	71. 29. 1	69. 42. 35	67. 56. 8	66. 9. 40	64. 23. 11	62. 36. 41	60. 50. 11	59. 3. 40	57. 17. 8	55. 30. 37	53. 44. 7	51. 57. 37	50. 11. 9	48. 24. 43	46. 38. 18
30		59. 3. 40	57. 17. 8	55. 30. 37	53. 44. 7	51. 57. 37	50. 11. 9	48. 24. 43	46. 38. 18	44. 51. 55	43. 5. 32	41. 19. 12	39. 32. 54	37. 46. 38	36. 0. 26	34. 14. 17	32. 28. 13
31		44. 51. 55	43. 5. 32	41. 19. 12	39. 32. 54	37. 46. 38	36. 0. 26	34. 14. 17	32. 28. 13	30. 42. 12							
J. 1		30. 42. 12															

Distances of γ 's Center from Sun, and from Stars well of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	75. 17. 25	76. 54. 45	78. 34. 15	80. 9. 53	81. 47. 40	83. 25. 36	85. 3. 40	86. 41. 53								
2		88. 20. 15	89. 58. 46	91. 37. 25	93. 16. 13	94. 55. 8	96. 34. 10	98. 13. 19	99. 52. 36								
3		101. 32. 0	103. 11. 32	104. 51. 12	106. 30. 57	108. 10. 49	109. 50. 46	111. 30. 48	113. 10. 55								
4		114. 51. 8	116. 31. 26	118. 11. 48	119. 52. 15	121. 32. 47											
2	Pollux.	23. 31. 19	25. 5. 44	26. 41. 24	28. 18. 12	29. 56. 5	31. 34. 59	33. 14. 38	34. 55. 2								
3		36. 36. 12	38. 17. 48	39. 59. 51	41. 42. 22	43. 25. 21	45. 8. 37	46. 52. 11	48. 36. 4								
4		50. 20. 14	52. 4. 39	53. 49. 16	55. 34. 4	57. 19. 4											
4																	
5	Regulus.	27. 19. 8	29. 4. 37	30. 50. 22	32. 36. 21	34. 22. 36	36. 8. 55	37. 55. 21	39. 41. 52								
6		41. 28. 29	43. 15. 7	45. 1. 46	46. 48. 24	48. 35. 3	50. 21. 38	52. 8. 10	53. 54. 38								
7		55. 41. 2	57. 27. 21	59. 13. 33	60. 59. 38	62. 45. 35	64. 31. 23	66. 17. 1	68. 2. 28								
8		69. 47. 45	71. 32. 50	73. 17. 43	75. 2. 23	76. 46. 50											
8	Spica μ .																
9		29. 42. 51	31. 26. 29	33. 9. 50	34. 52. 54	36. 35. 42	38. 18. 13	40. 0. 25	41. 42. 20								
10		43. 23. 56	45. 5. 13	46. 46. 11	48. 26. 50	50. 7. 9	51. 47. 8	53. 26. 48	55. 6. 8								
11		56. 45. 8	58. 23. 48	60. 2. 9	61. 40. 9	63. 17. 50	64. 55. 11	66. 32. 13	68. 8. 54								
12	Antares.	69. 45. 16															
12		24. 47. 3	26. 20. 57	27. 54. 43	29. 28. 21	31. 1. 52	32. 35. 13	34. 8. 24	35. 41. 24								
13		37. 14. 13	38. 46. 48	40. 19. 11	41. 51. 21	43. 23. 19	44. 55. 3	46. 26. 35	47. 57. 54								

XI.		M A Y 1789.										[59]
Stars. Names	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.				
Days.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.				
14	49. 29. 2	50. 59. 58	52. 30. 43	54. 1. 17	55. 31. 40	57. 1. 52	58. 31. 54	60. 1. 46				
15	61. 31. 28	63. 1. 1	64. 30. 27	65. 59. 44	67. 28. 54	68. 57. 57	70. 26. 53	71. 55. 44				
16	73. 24. 30	74. 53. 10	76. 21. 47	77. 50. 20	79. 18. 50	80. 47. 18	82. 15. 45	83. 44. 9				
17	85. 12. 31	86. 40. 54	88. 9. 17	89. 37. 41	91. 6. 5	92. 34. 32	94. 3. 2	95. 31. 36				
18	97. 0. 14											
18	48. 36. 24	49. 50. 43	51. 5. 38	52. 21. 10	53. 37. 18	54. 54. 0	56. 11. 13	57. 28. 57				
19	58. 47. 11	60. 5. 52	61. 24. 59	62. 44. 32	64. 4. 31	65. 24. 54	66. 45. 40	68. 6. 50				
20	69. 28. 23	70. 50. 18	72. 12. 33	73. 35. 10	74. 58. 7	76. 21. 24	77. 45. 0	79. 8. 55				
21	80. 33. 10	81. 57. 43	83. 22. 34	84. 47. 43	86. 13. 10							
21	44. 16. 45	45. 46. 4	47. 15. 55	48. 46. 21	38. 26. 10	39. 52. 48	41. 20. 6	42. 48. 6				
22	56. 26. 2				50. 17. 20	51. 48. 50	53. 20. 47	54. 53. 11				
23												
27	46. 2. 35	47. 41. 23	49. 20. 15	50. 59. 11	39. 28. 20	41. 6. 45	42. 45. 16	44. 23. 52				
28	59. 14. 45	60. 54. 0	62. 33. 18	64. 12. 36	52. 38. 12	54. 17. 16	55. 56. 23	57. 35. 32				
29	72. 29. 23	74. 8. 47	75. 48. 9	77. 27. 32	65. 51. 57	67. 31. 18	69. 10. 39	70. 50. 1				
30	85. 44. 6	87. 23. 21	89. 2. 35	90. 41. 46	79. 6. 54	80. 46. 14	82. 25. 32	84. 4. 50				
31	98. 56. 57				92. 20. 55	94. 0. 1	95. 39. 3	97. 18. 2				
J. 1												
31	47. 10. 51	48. 53. 54	50. 37. 1	52. 20. 15	54. 3. 34	55. 47. 1	57. 30. 31	59. 14. 4				
J. 1	60. 57. 40											

Configurations of the SATELLITES of JUPITER
at Half an Hour past Nine o' Clock in the Evening.

1	1●	.4	○	2.	.3
2		2.	.4	○	.1 3.
3	2.0		1.	○	.4 3.
4			3.	○	.1 2. .4
5			.1 2.	○	.4
6		.3	.2	○	1. .4
7			.1 .3	○	.2 4.
8				○	1. 2. .3 4.
9	1.0		2.	○	3. 4.
10			1. .2	○	3.4.
11	4●		3.	○	.1 .2
12	2●		.1 4. 1.	○	
13		.4	.3 .2	○	1.
14	4.		1 0 3	○	.2
15	4.			○	1. 3. .3
16	.4		2.	.1 ○	.3
17	1●	.4		.2 ○	3.
18	3●		.4	○	.1 .2
19	2●		.3	1. .4 ○	
20		.3	.2	○	1 0 4
21			1 0 3	○	.2 .4
22				○	1. 2. .3 .4
23			2.	.1 ○	.3 .4
24	1●			.2 ○	3. 4.
25	3●			○	.1 .2 4.
26			.3	1. ○	2. 4.
27		.3	2.	○	.1 4.
28			.3 1. 4.	○	.2
29			4.	○	1. .3 2.
30		4.		.2 .1 ○	.3
31	4.		.2	○	1. 3.

I. JUNE 1789. [61]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			Full Moon — 7. 8. 17
			Last Quarter — 15. 7. 5
			New Moon — 22. 20. 5
			First Quarter — 29. 12. 16
			Other Phenomena.
			D.H.M.
1	M.	Whit-Mond. Nicomede.	1. 1.58 ☾ e ☿
2	Tu.	Whit-Tuesday.	3. 4.13 ☾ a ♃
3	W.		5. ☿ : π d.L. 1'.
4	Th.	K. Geo. III. born 1738.	3.34 ☾ i ad i ♄
5	F.	Pr. Ernest. Aug. born.	15.33 ☾ x ☿
6	Sa.	[Boniface.	20.23 ☾ λ ♄
7	Su.	Trinity Sunday.	6. 1.14 ☾ β η
8	M.	On mor. of H. Trin. 1	7. 9.22 ☾ ♄ Serpent.
9	Tu.	[ret.	8. 8.12 ☾ i ad μ ♄
10	W.	Prs. Amel. b. Oxf. T. beg.	10.19.16 ☾ β υ ♄
11	Th.	St. Barnabas.	19.13.58 ☾ ♄ ♄
12	F.	Trinity Term begins.	19.55 ☾ ♂
13	Sa.		20.13.55 ☾ enters ☿
14	Su.	1st Sunday after Trinity.	25.11.11 ☾ i ad a ☿
15	M.	In 8 days of H. Tr. 2 ret.	12. 4 ☾ 2 ad a ☿
16	Tu.		16.13 ☾ x ☿
17	W.	St. Alban,	28. 7.23 ☾ e ☿
18	Th.		30. 9.37 ☾ a ♃
19	F.	[W. S.	
20	Sa.	Transl. of Edw. K. of	
21	Su.	2d Sunday after Trinity.	
22	M.	In 15 days of H. T. 3 ret.	
23	Tu.		
24	W.	Nat. of St. John Bapt.	
25	Th.		
26	F.		
27	Sa.		
28	Su.	3d Sunday after Trinity.	
29	M.	St. Peter. In 3 weeks of	
30	Tu.	[H. Tr. 4 ret.	

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	M.	2. 11. 18. 2	4. 38. 59, 2	22. 9. 31	2. 32, 9	9, 2
2	Tu.	2. 12. 15. 27	4. 43. 5, 1	22. 17. 14	2. 23, 7	9, 6
3	W.	2. 13. 12. 51	4. 47. 11, 3	22. 24. 34	2. 14, 1	9, 9
4	Th.	2. 14. 10. 13	4. 51. 17, 8	22. 31. 30	2. 4, 2	10, 3
5	F.	2. 15. 7. 34	4. 55. 24, 6	22. 38. 3	1. 53, 9	10, 5
6	Sa.	2. 16. 4. 54	4. 59. 31, 7	22. 44. 12	1. 43, 4	10, 8
7	Su.	2. 17. 2. 14	5. 3. 39, 1	22. 49. 58	1. 32, 6	11, 1
8	M.	2. 17. 59. 33	5. 7. 46, 8	22. 55. 19	1. 21, 5	11, 4
9	Tu.	2. 18. 56. 51	5. 11. 54, 8	23. 0. 16	1. 10, 1	11, 7
10	W.	2. 19. 54. 8	5. 16. 3, 1	23. 4. 49	0. 58, 4	11, 9
11	Th.	2. 20. 51. 25	5. 20. 11, 6	23. 8. 58	0. 46, 5	12, 1
12	F.	2. 21. 48. 42	5. 24. 20, 3	23. 12. 42	0. 34, 4	12, 3
13	Sa.	2. 22. 45. 58	5. 28. 29, 2	23. 16. 2	0. 22, 1	12, 5
14	Su.	2. 23. 43. 14	5. 32. 38, 3	23. 18. 57	0. 9, 6	12, 7
15	M.	2. 24. 40. 30	5. 36. 47, 5	23. 21. 28	Add: 3, 1	12, 8
16	Tu.	2. 25. 37. 46	5. 40. 56, 9	23. 23. 34	0. 15, 9	12, 9
17	W.	2. 26. 35. 2	5. 45. 6, 4	23. 25. 15	0. 28, 8	13, 0
18	Th.	2. 27. 32. 18	5. 49. 16, 0	23. 26. 31	0. 41, 8	13, 0
19	F.	2. 28. 29. 33	5. 53. 25, 6	23. 27. 23	0. 54, 8	13, 1
20	Sa.	2. 29. 26. 48	5. 57. 35, 3	23. 27. 50	1. 7, 9	13, 0
21	Su.	3. 0. 24. 3	6. 1. 44, 9	23. 27. 51	1. 20, 9	13, 0
22	M.	3. 1. 21. 18	6. 5. 54, 5	23. 27. 29	1. 33, 9	13, 0
23	Tu.	3. 2. 18. 33	6. 10. 4, 1	23. 26. 41	1. 46, 9	12, 9
24	W.	3. 3. 15. 47	6. 14. 13, 6	23. 25. 29	1. 59, 8	12, 8
25	Th.	3. 4. 13. 1	6. 18. 23, 0	23. 23. 52	2. 12, 6	12, 7
26	F.	3. 5. 10. 15	6. 22. 32, 2	23. 21. 50	2. 25, 3	12, 5
27	Sa.	3. 6. 7. 29	6. 26. 41, 3	23. 19. 23	2. 37, 8	12, 3
28	Su.	3. 7. 4. 42	6. 30. 50, 2	23. 16. 32	2. 50, 1	12, 1
29	M.	3. 8. 1. 55	6. 34. 58, 9	23. 13. 16	3. 2, 2	11, 8
30	Tu.	3. 8. 59. 7	6. 39. 7, 3	23. 9. 36	3. 14, 0	

III. J U N E 1789. [63]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15.48,9	1. 8,3	2. 23,6	0,006374	7. 27. 56
7	15.48,1	1. 8,6	2. 23,3	0,006675	7. 27. 37
13	15.47,5	1. 8,7	2. 23,2	0,006930	7. 27. 18
19	15.47,1	1. 8,8	2. 23,0	0,007126	7. 26. 59
25	15.46,9	1. 8,8	2. 23,0	0,007229	7. 26. 40

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days.	H. M. S.
2	8. 38. 44	2	19. 14. 14	1	16. 55. 6 I
4	3. 7. 10	6	8. 31. 47	1	20. 28. 22 E
5	21. 35. 34	9	21. 49. 11	8	20. 53. 18 I
7	16. 3. 57	13	11. 6. 26	9	0. 26. 42 E
9	10. 32. 19	17	0. 23. 36	16	0. 51. 15 I
11	5. 0. 39	20	13. 40. 41	16	4. 24. 47 E
12	23. 29. 0	24	2. 57. 46	23	4. 49. 3 I
14	17. 57. 20	27	16. 14. 45	23	8. 22. 43 E
16	12. 25. 39			30	8. 46. 53 I
18	6. 53. 58			30	12. 20. 39 E
20	1. 22. 16			IV. Satellite.	
21	19. 50. 34			14	8. 7. 49 I
23	14. 18. 52			14	12. 45. 11 E
25	8. 47. 10				
27	3. 15. 29				
28	21. 43. 48				
30	16. 12. 9				

[64]

J U N E 1789.

IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
M E R C U R Y. Gr. Elong. 17 ^d .						
1	5. 3. 39	6. 40 N	2. 29. 36	2. 7 N	25. 35 N	1. 19
4	5. 17. 12	5. 59	3. 4. 39	2. 6	25. 29	1. 29
7	5. 29. 30	5. 5	3. 9. 17	1. 58	25. 7	1. 37
10	6. 10. 46	4. 2	3. 13. 29	1. 44	24. 30	1. 43
13	6. 21. 10	2. 56	3. 17. 15	1. 23	23. 43	1. 47
16	7. 0. 53	1. 49	3. 20. 34	0. 56	22. 49	1. 49
19	7. 10. 4	0. 43 N	3. 23. 23	0. 24 N	21. 50	1. 48
22	7. 18. 51	0. 22 S	3. 25. 40	0. 13 S	20. 49	1. 45
25	7. 27. 21	1. 24	3. 27. 22	0. 55	19. 49	1. 39
28	8. 5. 40	2. 23	3. 28. 26	1. 40	18. 52	1. 30
30	8. 11. 10	3. 0	3. 28. 46	2. 11	18. 18	1. 23
V E N U S.						
1	2. 12. 4	0. 10 S	2. 11. 37	0. 4 S	22. 8 N	0. 1
7	2. 21. 45	0. 25 N	2. 18. 59	0. 10 N	23. 11	0. 8
13	3. 1. 27	0. 58	2. 26. 22	0. 24	23. 49	0. 16
19	3. 11. 10	1. 30	3. 3. 44	0. 38	24. 2	0. 23
25	3. 20. 54	2. 0	3. 11. 7	0. 50	23. 50	0. 30
M A R S.						
1	0. 13. 48	1. 3 S	1. 7. 25	0. 41 S	13. 21 N	21. 41
7	0. 17. 26	0. 57	1. 11. 50	0. 38	14. 48	21. 34
13	0. 21. 2	0. 50	1. 16. 12	0. 34	16. 10	21. 26
19	0. 24. 36	0. 44	1. 20. 33	0. 30	17. 26	21. 18
25	0. 28. 9	0. 38	1. 24. 51	0. 26	18. 35	21. 11
J U P I T E R.						
1	4. 6. 0	0. 36 N	3. 27. 59	0. 32 N	21. 7 N	3. 21
7	4. 6. 29	0. 37	3. 29. 6	0. 32	20. 53	3. 1
13	4. 6. 58	0. 37	4. 0. 16	0. 33	20. 38	2. 42
19	4. 7. 26	0. 38	4. 1. 27	0. 33	20. 23	2. 22
25	4. 7. 55	0. 38	4. 2. 40	0. 33	20. 7	2. 2
S A T U R N. $\square$ 13 ^d . 5 ^h .						
1	11. 16. 32	2. 3 S	11. 22. 28	2. 1 S	4. 51 S	18. 53
7	11. 16. 44	2. 3	11. 22. 45	2. 2	4. 45	18. 30
13	11. 16. 56	2. 3	11. 22. 59	2. 4	4. 41	18. 6
19	11. 17. 7	2. 4	11. 23. 9	2. 6	4. 39	17. 42
25	11. 17. 19	2. 4	11. 23. 16	2. 7	4. 37	17. 17

V. JUNE 1789. [65]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	M.	5. 20.16.58	5. 27.22. 4	4.53.50 S	4.37. 9 S
2	Tu.	6. 4.25.42	6. 11.27.37	4.16.20	3.51.42
3	W.	6. 18.27.37	6. 25.25.23	3.23.43	2.52.53
4	Th.	7. 2.20.45	7. 9.13.27	2.19.40	1.44.38
5	F.	7. 16. 3.19	7. 22.50. 9	1. 8.21 S	0.31.22 S
6	Sa.	7. 29.33.43	8. 6.13.57	0. 5.45 N	0.42.26 N
7	Su.	8. 12.50.34	8. 19.23.33	1.18.12	1.52.35
8	M.	8. 25.52.49	9. 2.18.18	2.25. 8	2.55.31
9	Tu.	9. 8.40. 4	9. 14.58. 8	3.23.22	3.48.26
10	W.	9. 21.12.40	9. 27.23.47	4.10.31	4.29.27
11	Th.	10. 3.31.45	10. 9.36.51	4.45. 5	4.57.24
12	F.	10. 15.39.24	10. 21.39.49	5. 6.16	5.11.45
13	Sa.	10. 27.38.30	11. 3.35.57	5.13.46	5.12.26
14	Su.	11. 9.32.41	11. 15.29.12	5. 7.43	4.59.44
15	M.	11. 21.26. 7	11. 27.23.59	4.48.31	4.34. 9
16	Tu.	0. 3.23.24	0. 9.24.58	4.16.45	3.56.23
17	W.	0. 15.29.16	0. 21.36.51	3.33.16	3. 7.27
18	Th.	0. 27.48.18	1. 4. 4. 4	2.39.13	2. 8.46
19	F.	1. 10.24.39	1. 16.50.26	1.36.21	1. 2.18 N
20	Sa.	1. 23.21.41	1. 29.58.40	0.26.58 N	0. 9.13 S
21	Su.	2. 6.41.24	2. 13.29.57	0.45.47 S	1.22.10
22	M.	2. 20.24. 6	2. 27.23.34	1.57.49	2.32. 7
23	Tu.	3. 4.27.56	3. 11.36.36	3. 4.26	3.34.12
24	W.	3. 18.48.55	3. 26. 4. 9	4. 0.46	4.23.39
25	Th.	4. 3.21.25	4. 10.39.53	4.42.20	4.56.28
26	F.	4. 17.58.39	4. 25.16.58	5. 5.45	5.10. 5
27	Sa.	5. 2.34. 2	5. 9.49.15	5. 9.22	5. 3.44
28	Su.	5. 17. 2. 2	5. 24.11.54	4.53.18	4.38.20
29	M.	6. 1.18.32	6. 8.21.43	4.19.12	3.56.14
30	Tu.	6. 15.21.17	6. 22.17.12	3.29.58	3. 0.49

[66]		J U N E 1789.				VI.	
Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Ascen. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	M.	9	6. 52	169. 9	175. 45	0. 39 S	3. 11 S
2	Tu.	10	7. 43	182. 22	189. 1	5. 41	8. 5
3	W.	11	8. 34	195. 43	202. 29	10. 23	12. 31
4	Th.	12	9. 26	209. 20	216. 15	14. 29	16. 14
5	F.	13	10. 20	223. 14	230. 17	17. 45	19. 0
6	Sa.	14	11. 14	237. 23	244. 29	19. 59	20. 40
7	Su.	15	12. 8	251. 34	258. 37	21. 4	21. 10
8	M.	16	13. 1	265. 35	272. 27	20. 59	20. 31
9	Tu.	17	13. 52	279. 12	285. 48	19. 48	18. 50
10	W.	18	14. 41	292. 15	298. 33	17. 40	16. 18
11	Th.	19	15. 27	304. 42	310. 42	14. 46	13. 5
12	F.	20	16. 10	316. 35	322. 21	11. 17	9. 23
13	Sa.	21	16. 52	328. 2	333. 38	7. 23	5. 20
14	Su.	22	17. 33	339. 11	344. 42	3. 14 S	1. 7 S
15	M.	23	18. 15	350. 14	355. 48	1. 1 N	3. 9 N
16	Tu.	24	18. 58	1. 24	7. 5	5. 16	7. 21
17	W.	25	19. 43	12. 52	18. 47	9. 23	11. 20
18	Th.	26	20. 30	24. 50	31. 4	13. 11	14. 54
19	F.	27	21. 21	37. 27	44. 3	16. 29	17. 53
20	Sa.	28	22. 15	50. 51	57. 50	19. 4	20. 1
21	Su.	29	23. 11	64. 59	72. 17	20. 42	21. 5
22	M.	1	♂	79. 42	87. 13	21. 9	20. 54
23	Tu.	2	0. 9	94. 45	102. 18	20. 19	19. 24
24	W.	3	1. 7	109. 48	117. 13	18. 10	16. 38
25	Th.	4	2. 4	124. 32	131. 45	14. 51	12. 49
26	F.	5	2. 59	138. 50	145. 48	10. 36	8. 14
27	Sa.	6	3. 52	152. 40	159. 27	5. 45	3. 12 N
28	Su.	7	4. 43	166. 10	172. 50	0. 37 N	1. 57 S
29	M.	8	5. 34	179. 28	186. 7	4. 29 S	6. 56
30	Tu.	9	6. 25	192. 47	199. 28	9. 17	11. 29

VII.		J U N E 1789.				[67]	
Days of the Month.	Days of the Week.	Semid ^r . D at Noon.	Semid ^r . D at Midnight.	Hor.Par. D at Noon.	Hor.Par. D at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	M.	16. 11	16. 10	59. 23	59. 19	4816	4821
2	Tu.	16. 8	16. 6	59. 13	59. 5	4828	4838
3	W.	16. 4	16. 1	58. 57	58. 47	4848	4860
4	Th.	15. 58	15. 55	58. 36	58. 24	4874	4889
5	F.	15. 51	15. 47	58. 11	57. 57	4905	4922
6	Sa.	15. 43	15. 39	57. 42	57. 26	4941	4961
7	Su.	15. 34	15. 29	57. 9	56. 52	4983	5004
8	M.	15. 25	15. 20	56. 34	56. 17	5027	5049
9	Tu.	15. 16	15. 11	55. 59	55. 43	5072	5093
10	W.	15. 7	15. 3	55. 27	55. 13	5114	5132
11	Th.	14. 59	14. 56	55. 0	54. 49	5149	5163
12	F.	14. 53	14. 51	54. 39	54. 31	5177	5187
13	Sa.	14. 50	14. 49	54. 26	54. 22	5194	5199
14	Su.	14. 49	14. 49	54. 21	54. 23	5201	5198
15	M.	14. 50	14. 52	54. 27	54. 34	5193	5183
16	Tu.	14. 55	14. 58	54. 43	54. 55	5171	5155
17	W.	15. 2	15. 7	55. 10	55. 27	5136	5114
18	Th.	15. 12	15. 17	55. 45	56. 5	5090	5064
19	F.	15. 23	15. 29	56. 27	56. 50	5036	5006
20	Sa.	15. 35	15. 42	57. 13	57. 37	4977	4947
21	Su.	15. 48	15. 54	58. 0	58. 22	4918	4891
22	M.	16. 0	16. 5	58. 44	59. 3	4864	4841
23	Tu.	16. 10	16. 14	59. 21	59. 36	4819	4800
24	W.	16. 18	16. 20	59. 49	59. 58	4784	4773
25	Th.	16. 22	16. 23	60. 5	60. 8	4765	4761
26	F.	16. 23	16. 23	60. 9	60. 7	4760	4763
27	Sa.	16. 22	16. 20	60. 2	59. 55	4769	4777
28	Su.	16. 17	16. 14	59. 46	59. 35	4788	4801
29	M.	16. 11	16. 7	59. 23	59. 10	4816	4832
30	Tu.	16. 4	16. 0	58. 56	58. 42	4849	4866

Distances of γ 's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1		76.	14. 46	74.	29. 11	72.	43. 39	70.	58. 11	69.	12. 47	67.	27. 29	65.	42. 16	63.	57. 8
2	Antares.	62.	12. 5	60.	27. 9	58.	42. 19	56.	57. 36	55.	12. 59	53.	28. 29	51.	44. 7	49.	59. 53
3		48.	15. 48	46.	31. 52	44.	48. 7	43.	4. 32	41.	21. 8	39.	37. 54	37.	54. 54	36.	12. 8
4		34.	29. 36	32.	47. 20	31.	5. 23	29.	23. 43	27.	42. 22						
4	α Aquilæ.	75.	35. 47	74.	3. 27	72.	31. 29	70.	59. 52	81.	47. 48	80.	14. 25	78.	41. 18	77.	8. 25
5		63.	28. 2	61.	59. 5	60.	30. 42	59.	2. 52	69.	28. 37	67.	57. 47	66.	27. 24	64.	57. 29
6	Fomal- haut.	79.	20. 56	77.	52. 43	76.	24. 51	74.	57. 21	85.	16. 53	83.	47. 27	82.	18. 20	80.	49. 29
7		67.	45. 47	66.	20. 50	64.	56. 24	63.	32. 31	73.	30. 12	72.	3. 26	70.	37. 7	69.	11. 14
8										62.	9. 9						
9	α Pegasi.	71.	48. 11	70.	16. 41	68.	45. 29	67.	14. 37	77.	57. 13	76.	24. 31	74.	52. 6	73.	20. 0
10		59.	45. 3	58.	16. 9	56.	47. 37	55.	19. 27	65.	44. 3	64.	13. 48	62.	43. 53	61.	14. 18
11		48.	4. 21	46.	38. 34	45.	13. 15	43.	48. 24	53.	51. 39	52.	24. 13	50.	57. 11	49.	30. 34
11										42.	24. 0						
12	α Arietis.	78.	22. 27	76.	53. 24	75.	24. 29	73.	55. 42	84.	20. 15	82.	50. 34	81.	21. 2	79.	51. 40
13		66.	33. 40	65.	5. 35	63.	37. 35	62.	9. 40	72.	27. 3	70.	58. 32	69.	30. 8	68.	1. 51
14		54.	51. 11	53.	23. 40	51.	56. 11	50.	28. 44	60.	41. 51	59.	14. 6	57.	46. 24	56.	18. 46
15		43.	12. 2	41.	44. 46	40.	17. 32	38.	50. 20	49.	1. 21	47.	33. 59	46.	6. 38	44.	39. 19
										37.	23. 9						

[70] JUNE 1789. X.																	
Distances of D's Center from Sun, and from Stars west of her.																	
Days	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
1	The Sun.	98. 56. 57	100. 35. 52	102. 14. 43	103. 53. 30	105. 32. 13	107. 10. 52	108. 49. 27	110. 27. 57								
2		112. 6. 22	113. 44. 42	115. 22. 57	117. 1. 7	118. 39. 11	120. 17. 10										
1		23. 57. 18	25. 40. 25	27. 23. 44	29. 7. 16	30. 51. 0	32. 34. 54	34. 18. 53	36. 2. 58								
2		37. 47. 8	39. 31. 18	41. 15. 28	42. 59. 39	44. 43. 49	46. 27. 57	48. 12. 3	49. 56. 5								
3	Regulus.	51. 40. 5	53. 24. 3	55. 7. 53	56. 51. 58	58. 35. 15	60. 18. 52	62. 2. 20	63. 45. 40								
4		65. 28. 51	67. 11. 57	68. 54. 55	70. 37. 44	72. 20. 25											
4		25. 8. 55	26. 51. 13	28. 33. 20	30. 15. 16	31. 57. 2	33. 38. 34	35. 19. 55	37. 1. 3	21. 43. 52	20. 1. 8	28. 15. 19	29. 39. 13	31. 13. 2			
5		38. 42. 0	40. 22. 46	42. 3. 18	43. 43. 38	45. 23. 44	47. 3. 35	48. 43. 12	50. 22. 35								
6	Spica η	52. 1. 44	53. 40. 39	55. 19. 19	56. 57. 45	58. 35. 56	60. 13. 53	61. 51. 34	63. 29. 0								
7		65. 6. 11															
8		20. 15. 50	21. 49. 37	23. 23. 28	24. 57. 23	26. 31. 21	28. 15. 19	29. 39. 13	31. 13. 2								
9		32. 46. 48	34. 20. 23	35. 53. 48	37. 27. 5	39. 0. 13	40. 33. 10	42. 5. 56	43. 38. 31								
10	Antares.	45. 10. 55	46. 43. 7	48. 15. 8	49. 46. 58	51. 18. 36	52. 50. 3	54. 21. 19	55. 52. 24								
11		57. 23. 19	58. 54. 3	60. 24. 37	61. 55. 2	63. 25. 16	64. 55. 20	66. 25. 16	67. 55. 3								
12		69. 24. 41	70. 54. 12	72. 23. 35	73. 52. 51	75. 22. 0	76. 51. 2	78. 19. 59	79. 48. 50								
13		81. 17. 36	82. 46. 18	84. 14. 56	85. 43. 31	87. 12. 2	88. 40. 31	90. 8. 58	91. 37. 24								
14		93. 5. 49	94. 34. 13	96. 2. 38	97. 31. 4	98. 59. 30											

XI.		J U N E 1789.										[71]					
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
14																	
15		55. 21. 16		56. 38. 13		57. 55. 36		59. 13. 25		59. 18. 32		51. 33. 26		52. 48. 52		54. 4. 44	
16	α Aquilæ.	65. 48. 31		67. 8. 39		68. 29. 9		69. 49. 58		60. 31. 40		61. 50. 18		63. 9. 20		64. 28. 44	
17		76. 39. 2		78. 1. 48		79. 24. 52		80. 48. 14		71. 11. 9		72. 32. 38		73. 54. 27		75. 16. 35	
18		87. 49. 33								82. 11. 55		83. 35. 53		85. 0. 9		86. 24. 42	
18		40. 3. 28		41. 30. 0		42. 57. 10		44. 24. 59		45. 53. 27		47. 22. 32		48. 52. 11		50. 22. 25	
19	α Pegasi.	51. 53. 14		53. 24. 34		54. 56. 24		56. 28. 46		58. 1. 38		59. 34. 59		61. 8. 49		62. 43. 6	
20		64. 17. 51															
20	α Arietis.	20. 50. 19		22. 22. 33		23. 55. 49		25. 30. 4		27. 5. 20		28. 41. 28		30. 18. 24		31. 56. 4	
21		33. 34. 29		35. 13. 32		36. 53. 7		38. 33. 11		40. 13. 46							
25		43. 3. 3		44. 44. 51		46. 26. 36		48. 8. 18		49. 49. 58		51. 31. 33		53. 13. 2		54. 54. 27	
26		56. 35. 46		58. 16. 59		59. 58. 5		61. 39. 4		63. 19. 56		65. 0. 39		66. 41. 14		68. 21. 39	
27		70. 1. 55		71. 42. 1		73. 21. 56		75. 1. 41		76. 41. 16		78. 20. 40		79. 59. 53		81. 38. 55	
28	The Sun.	83. 17. 46		84. 56. 25		86. 34. 53		88. 13. 9		89. 51. 13		91. 29. 5		93. 6. 44		94. 44. 12	
29		96. 21. 27		97. 58. 30		99. 35. 20		101. 11. 59		102. 48. 24		104. 24. 37		106. 0. 37		107. 36. 25	
30		109. 12. 0															
J. 1																	
29																	
30	Regulus.	48. 34. 54		50. 18. 24		52. 1. 44		53. 44. 55		41. 39. 29		43. 23. 33		45. 7. 28		46. 51. 15	
J. 1		62. 18. 11								55. 27. 56		57. 10. 46		58. 53. 25		60. 35. 54	

Configurations of the SATELLITES of JUPITER
at Half an Hour past Nine o' Clock in the Evening.

1	4.			⊙	3.	.2		1.0
2	.4		3.	1.	⊙	2.		
3		.4	3.	2.	⊙	.1		
4	2.0		.4	.3	1.	⊙		
5				.4	⊙	.3	1. 2.	
6			.1	2.	⊙	.4	.3	
7			.2		⊙	1.	3.	.4
8				.1	⊙	3.	.2	.4
9	1.0		3.		⊙	2.		.4
10			3.	2.	⊙	.1		4.
11			.3	1.	.2	⊙		4.
12	3.0				⊙	.1	.2	4.
13	2.0			.1	⊙	4.	.3	
14	4.0		.2	4.	⊙	1.	3.	
15			4.	.1	⊙	.2	3.	
16	1.0	4.		3.	⊙	2.		
17	4.		3.	2.	⊙	.1		
18	.4		.3	.2	1.	⊙		
19	.4			.3	⊙	.1	.2	
20		.4	2.	1.	⊙	.3		2.0
21			.4	.2	⊙	1.	3.	
22	4.0			.1	⊙	.2	3.	
23				3.	⊙	1.	2.	.4
24	1.0		3.	2.	⊙			.4
25			.3	.2	1.	⊙		.4

I.		J U L Y 1789.		[73]
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
			Full Moon -- 6. 20. 31	
			Last Quarter - 14. 23. 21	
			New Moon -- 22. 4. 1	
			First Quarter - 28. 18. 20	
			Other Phenomena.	
1	W.	Trinity Term ends.	D. H. M.	
2	Th.	Visitation of V. Mary.	1. Stationary.	
3	F.		2. 8. 51 $\frac{3}{4}$ Im. of 1 ad $\frac{1}{4}$ α	
4	Sa.	Translat. of St. Martin.	* 0 $\frac{1}{2}$ S. of α 's cent.	
5	Su.	4th Sunday after Trinity.	10. 8 Em. * 2 $\frac{1}{2}$ S.	
6	M.		21. 47 α α	
7	Tu.	Camb. Commencement.	3. 2. 43 α α	
8	W.		7. 40 α β η	
9	Th.		4. Stationary.	
10	F.	Camb. Term ends.	16. 19 α ϵ Serp.	
11	Sa.		5. 15. 27 α 1 ad μ ϵ	
12	Su.	5th Sunday after Trinity.	8. 2. 49 α β ν	
13	M.	Oxford Aët.	9. 24 δ diff. Lat. 30'.	
14	Tu.	Swithin.	13. 23. 22 α δ $\times$	
15	W.		16. ϵ 24 diff. Lat. 48'.	
16	Th.		22. 58 α δ γ	
17	F.		18. 18. 3 α δ	
18	Sa.	Oxford Term ends.	22. 20 α ϵ δ	
19	Su.	6th Sunday after Trinity.	19. 12. 17 α ζ δ	
20	M.	Margaret.	21. 10. 17 α δ	
21	Tu.		22. 0. 44 $\odot$ enters Ω	
22	W.	Magdalen.	25. 14. 23 α ϵ Ω	
23	Th.		26. Stationary.	
24	F.		27. 15. 26 α α η	
25	Sa.	St. James.	29. 15. 0 α 1 ad $\frac{1}{4}$ α	
26	Su.	7th Sunday after Trinity.	30. 3. 12 α α α	
27	M.	[St. Anne.]	8. 9 α λ α	
28	Tu.		13. 6 α β η	
29	W.		31. 22. 1 α ϵ Serp.	
30	Th.			
31	F.			

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	3. 9.56.18	6.43.15,3	23. 5.32	3.25,5	11,2
2	Th.	3. 10.53.30	6.47.23,2	23. 1. 3	3.36,7	11,0
3	F.	3. 11.50.41	6.51.30,8	22.56.11	3.47,7	10,7
4	Sa.	3. 12.47.52	6.55.38,0	22.50.54	3.58,4	10,3
5	Su.	3. 13.45. 3	6.59.44,9	22.45.14	4. 8,7	9,9
6	M.	3. 14.42.14	7. 3.51,4	22.39.10	4.18,6	9,6
7	Tu.	3. 15.39.25	7. 7.57,6	22.32.42	4.28,2	9,2
8	W.	3. 16.36.36	7.12. 3,4	22.25.52	4.37,4	8,8
9	Th.	3. 17.33.48	7.16. 8,8	22.18.39	4.46,2	8,5
10	F.	3. 18.30.59	7.20.13,8	22.11. 2	4.54,7	8,0
11	Sa.	3. 19.28.11	7.24.18,3	22. 3. 1	5. 2,7	7,5
12	Su.	3. 20.25.24	7.28.22,5	21.54.38	5.10,2	7,1
13	M.	3. 21.22.38	7.32.26,2	21.45.52	5.17,3	6,7
14	Tu.	3. 22.19.52	7.36.29,4	21.36.45	5.24,0	6,2
15	W.	3. 23.17. 7	7.40.32,2	21.27.14	5.30,2	5,8
16	Th.	3. 24.14.23	7.44.34,5	21.17.22	5.36,0	5,2
17	F.	3. 25.11.40	7.48.36,3	21. 7. 9	5.41,2	4,7
18	Sa.	3. 26. 8.57	7.52.37,6	20.56.33	5.45,9	4,2
19	Su.	3. 27. 6.16	7.56.38,4	20.45.37	5.50,1	3,7
20	M.	3. 28. 3.35	8. 0.38,6	20.34.19	5.53,8	3,1
21	Tu.	3. 29. 0.54	8. 4.38,3	20.22.41	5.56,9	2,6
22	W.	3. 29.58.15	8. 8.37,4	20.10.42	5.59,5	2,0
23	Th.	4. 0.55.37	8.12.36,0	19.58.22	6. 1,5	1,4
24	F.	4. 1.52.59	8.16.34,0	19.45.43	6. 2,9	0,8
25	Sa.	4. 2.50.21	8.20.31,3	19.32.44	6. 3,7	0,2
26	Su.	4. 3.47.44	8.24.28,1	19.19.26	6. 3,9	0,4
27	M.	4. 4.45. 8	8.28.24,3	19. 5.48	6. 3,5	1,0
28	Tu.	4. 5.42.31	8.32.19,8	18.51.51	6. 2,5	1,6
29	W.	4. 6.39.56	8.36.14,7	18.37.36	6. 0,9	2,3
30	Th.	4. 7.37.21	8.40. 9,0	18.23. 2	5.58,6	2,9
31	F.	4. 8.34.47	8.44. 2,7	18. 8.11	5.55,7	

III. JULY 1789. [75]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 46,9	1. 8,6	2. 23,0	0. 007240	7. 26. 21
7	15. 47,0	1. 8,3	2. 23,0	0. 007182	7. 26. 2
13	15. 47,2	1. 8,0	2. 23,1	0. 007077	7. 25. 43
19	15. 47,6	1. 7,6	2. 23,2	0. 006903	7. 25. 24
25	15. 48,2	1. 7,1	2. 23,4	0. 006642	7. 25. 5

The Eclipses of JUPITER's Satellites will not be
visible this Month, JUPITER being too
near the SUN.

[76]

JULY 1789.

IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Inf. δ 14^d. 15^h.

1	8. 13. 55	3. 18 S	3. 28. 48	2. 26 S	18. 2 N	1. 19
4	8. 22. 10	4. 10	3. 28. 30	3. 12	17. 22	1. 4
7	9. 0. 31	4. 56	3. 27. 30	3. 53	16. 53	0. 47
10	9. 9. 5	5. 37	3. 25. 58	4. 27	16. 37	0. 28
13	9. 17. 56	6. 12	3. 24. 3	4. 48	16. 36	0. 8
16	9. 27. 12	6. 38	3. 22. 2	4. 57	16. 47	23. 41
19	10. 7. 1	6. 55	3. 20. 15	4. 48	17. 11	23. 23
22	10. 17. 29	7. 0	3. 18. 59	4. 26	17. 43	23. 7
25	10. 28. 47	6. 49	3. 18. 28	3. 53	18. 21	22. 54
28	11. 11. 4	6. 20	3. 18. 49	3. 12	18. 59	22. 45
31	11. 24. 31	5. 29	3. 20. 7	2. 25	19. 34	22. 40

VENUS.

1	4. 0. 38	2. 26 N	3. 18. 29	1. 1 N	23. 12 N	0. 37
7	4. 10. 23	2. 48	3. 25. 51	1. 11	22. 10	0. 44
13	4. 20. 9	3. 5	4. 3. 13	1. 19	20. 45	0. 51
19	4. 29. 55	3. 17	4. 10. 36	1. 25	18. 58	0. 57
25	5. 9. 40	3. 23	4. 17. 58	1. 28	16. 52	1. 3

MARS.

1	1. 1. 39	0. 31 S	1. 29. 6	0. 22 S	19. 37 N	21. 4
7	1. 5. 8	0. 25	2. 3. 20	0. 18	20. 33	20. 56
13	1. 8. 35	0. 18	2. 7. 30	0. 13	21. 22	20. 50
19	1. 11. 59	0. 12	2. 11. 38	0. 9	22. 4	20. 43
25	1. 15. 22	0. 5	2. 15. 44	0. 4	22. 38	20. 36

JUPITER.

1	4. 8. 24	0. 39 N	4. 3. 56	0. 33 N	19. 50 N	1. 42
7	4. 8. 52	0. 40	4. 5. 12	0. 34	19. 32	1. 23
13	4. 9. 21	0. 40	4. 6. 30	0. 34	19. 13	1. 4
19	4. 9. 50	0. 41	4. 7. 48	0. 34	18. 54	0. 45
25	4. 10. 18	0. 41	4. 9. 7	0. 35	18. 34	0. 26

SATURN.

1	11. 17. 31	2. 4 S	11. 23. 19	2. 9 S	4. 38 S	16. 53
7	11. 17. 43	2. 4	11. 23. 19	2. 10	4. 39	16. 28
13	11. 17. 55	2. 5	11. 23. 15	2. 12	4. 42	16. 3
19	11. 18. 6	2. 5	11. 23. 8	2. 13	4. 46	15. 39
25	11. 18. 18	2. 5	11. 22. 57	2. 15	4. 52	15. 14

V.		J U L Y 1789.				[77]
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.	
		S. D. M. S.	S. D. M. S.	D.M.S.	D. M. S.	
1	W.	6. 29. 9.27	7. 5.58. 1	2.29.15 S	1. 55. 50 S	
2	Th.	7. 12.43. 1	7. 19.24.36	1.21. 7	0. 45. 35 S	
3	F.	7. 26. 2.48	8. 2.37.47	0. 9.47 S	0. 25. 51 N	
4	Sa.	8. 9. 9.38	8. 15.38.26	1. 0.49 N	1. 34. 41	
5	Su.	8. 22. 4.17	8. 28.27.15	2. 7. 2	2. 37. 30	
6	M.	9. 4.47.23	9. 11. 4.46	3. 5.44	3. 31. 28	
7	Tu.	9. 17.19.24	9. 23.31.24	3.54.24	4. 14. 24	
8	W.	9. 29.40.49	10. 5.47.46	4.31.15	4. 44. 51	
9	Th.	10. 11.52.24	10. 17.54.51	4.55. 6	5. 2. 0	
10	F.	10. 23.55.23	10. 29.54.14	5. 5.30	5. 5.37	
11	Sa.	11. 5.51.43	11. 11.48.13	5. 2.25	4. 55. 56	
12	Su.	11. 17.44. 7	11. 23.39.52	4.46.19	4. 33. 35	
13	M.	11. 29.35.57	0. 5.33. 1	4.17.54	3. 59. 21	
14	Tu.	0. 11.31.29	0. 17.32. 2	3.38. 9	3. 14. 24	
15	W.	0. 23.35.14	0. 29.41.45	2.48.17	2. 20. 1	
16	Th.	1. 5.52.11	1. 12. 7.10	1.49.48	1. 17. 55	
17	F.	1. 18.27.15	1. 24.53. 4	0.44.39 N	0. 10. 21 N	
18	Sa.	2. 1.25. 0	2. 8. 3.30	0.24.36 S	0. 59. 46 S	
19	Su.	2. 14.48.48	2. 21.41. 4	1.34.40	2. 8. 45	
20	M.	2. 28.40.14	3. 5.46. 6	2.41.27	3. 12. 7	
21	Tu.	3. 12.58.13	3. 20.16. 0	3.40. 9	4. 4. 57	
22	W.	3. 27.38.37	4. 5. 5. 4	4.55.54	4. 42. 33	
23	Th.	4. 12.34.15	4. 20. 4.58	4.54.25	5. 1. 17	
24	F.	4. 27.35.56	5. 5. 6. 1	5. 2.55	4. 59. 21	
25	Sa.	5. 12.34. 2	5. 19.59. 1	4.50.42	4. 37. 10	
26	Su.	5. 27.20. 6	6. 4.36.39	4.19.10	3. 57. 7	
27	M.	6. 11.48. 9	6. 18.54.17	3.31.31	3. 2. 55	
28	Tu.	6. 25.54.55	7. 2.50. 6	2.31.55	1. 59. 2	
29	W.	7. 9.39.52	7. 16.24.28	1.24.52	0. 49. 55 S	
30	Th.	7. 23. 4.12	7. 29.39.18	0.14.43 S	0. 20. 15 N	
31	F.	8. 6.10.11	8. 12.37. 7	0.54.34 N	1. 27. 48	

[78]

JULY 1789.

VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascens. at Noon.	D's Right Ascens. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	10	7. 18	206. 12	212. 59	13. 31 S	15. 21 S
2	Th.	11	8. 9	219. 50	226. 44	16. 58	18. 20
3	F.	12	9. 2	233. 41	240. 39	19. 27	20. 17
4	Sa.	13	9. 56	247. 38	254. 35	20. 50	21. 7
5	Su.	14	10. 49	261. 30	268. 21	21. 7	20. 50
6	M.	15	11. 40	275. 6	281. 45	20. 17	19. 29
7	Tu.	16	12. 29	288. 16	294. 38	18. 28	17. 14
8	W.	17	13. 16	300. 52	306. 58	15. 49	14. 14
9	Th.	18	14. 0	312. 56	318. 47	12. 31	10. 41
10	F.	19	14. 43	324. 32	330. 12	8. 45	6. 45
11	Sa.	20	15. 25	335. 48	341. 21	4. 41	2. 35 S
12	Su.	21	16. 6	346. 52	352. 23	0. 28 S	1. 40 N
13	M.	22	16. 48	357. 55	3. 30	3. 47 N	5. 52
14	Tu.	23	17. 31	9. 9	14. 54	7. 54	9. 53
15	W.	24	18. 16	20. 46	26. 46	11. 46	13. 33
16	Th.	25	19. 4	32. 56	39. 16	15. 13	16. 44
17	F.	26	19. 56	45. 46	52. 29	18. 4	19. 11
18	Sa.	27	20. 51	59. 23	66. 28	20. 4	20. 42
19	Su.	28	21. 48	73. 42	81. 5	21. 2	21. 4
20	M.	29	22. 47	88. 35	96. 8	20. 46	20. 8
21	Tu.	30	23. 46	103. 43	111. 17	19. 11	17. 54
22	W.	1	♂	118. 49	126. 16	16. 19	14. 27
23	Th.	2	0. 44	133. 38	140. 53	12. 20	10. 2
24	F.	3	1. 39	148. 3	155. 6	7. 35	5. 0 N
25	Sa.	4	2. 33	162. 5	168. 59	2. 22 N	0. 17 S
26	Su.	5	3. 26	175. 50	182. 39	2. 54 S	5. 28
27	M.	6	4. 18	189. 27	196. 16	7. 55	10. 14
28	Tu.	7	5. 11	203. 5	209. 55	12. 23	14. 20
29	W.	8	6. 4	216. 47	223. 41	16. 4	17. 34
30	Th.	9	6. 57	230. 36	237. 31	18. 48	19. 46
31	F.	10	7. 50	244. 27	251. 22	20. 28	20. 53

VII. JULY 1789. [79]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon.	Semidr. Δ at Mid-night.	Hor. Par. Δ at Noon.	Hor. Par. Δ at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
1	W.	15. 55	15. 51	58. 26	58. 11	4886	4905
2	Th.	15. 47	15. 43	57. 56	57. 40	4923	4943
3	F.	15. 39	15. 34	57. 25	57. 9	4962	4983
4	Sa.	15. 30	15. 26	56. 54	56. 38	5002	5022
5	Su.	15. 22	15. 18	56. 23	56. 8	5041	5060
6	M.	15. 14	15. 10	55. 53	55. 39	5080	5098
7	Tu.	15. 6	15. 3	55. 26	55. 13	5115	5132
8	W.	14. 59	14. 56	55. 1	54. 50	5148	5162
9	Th.	14. 54	14. 52	54. 40	54. 32	5175	5186
10	F.	14. 50	14. 48	54. 25	54. 20	5195	5202
11	Sa.	14. 47	14. 47	54. 16	54. 15	5207	5209
12	Su.	14. 47	14. 48	54. 15	54. 18	5209	5205
13	M.	14. 49	14. 51	54. 23	54. 31	5198	5187
14	Tu.	14. 54	14. 58	54. 41	54. 54	5174	5157
15	W.	15. 2	15. 7	55. 9	55. 27	5137	5114
16	Th.	15. 12	15. 18	55. 47	56. 8	5087	5060
17	F.	15. 24	15. 31	56. 31	56. 56	5031	4999
18	Sa.	15. 38	15. 46	57. 23	57. 50	4965	4931
19	Su.	15. 53	16. 0	58. 17	58. 44	4897	4864
20	M.	16. 7	16. 14	59. 10	59. 35	4832	4801
21	Tu.	16. 20	16. 25	59. 57	60. 16	4775	4752
22	W.	16. 30	16. 33	60. 32	60. 44	4733	4718
23	Th.	16. 35	16. 36	60. 52	60. 56	4709	4704
24	F.	16. 36	16. 35	60. 55	60. 50	4705	4711
25	Sa.	16. 32	16. 29	60. 42	60. 31	4721	4734
26	Su.	16. 26	16. 21	60. 17	60. 0	4751	4771
27	M.	16. 16	16. 10	59. 41	59. 21	4794	4819
28	Tu.	16. 5	15. 59	59. 0	58. 39	4844	4870
29	W.	15. 53	15. 47	58. 18	57. 56	4896	4923
30	Th.	15. 41	15. 36	57. 35	57. 15	4950	4975
31	F.	15. 31	15. 26	56. 56	56. 37	4999	5023

IX.		J U L Y 1789.										[81]					
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
12	The Sun.	122.	33. 39	121.	12. 24	119.	51. 8	118.	29. 51	117.	8. 33	115.	47. 13	114.	25. 49	113.	4. 21
13		111.	42. 50	110.	21. 13	108.	59. 30	107.	37. 42	106.	15. 48	104.	53. 49	103.	31. 41	102.	9. 27
14		100.	47. 4	99.	24. 32	98.	1. 50	96.	38. 58	95.	15. 56	93.	52. 43	92.	29. 19	91.	5. 42
15		89.	41. 54	88.	17. 52	86.	53. 35	85.	29. 4	84.	4. 18	82.	39. 17	81.	13. 59	79.	48. 25
16		78.	22. 34	76.	56. 25	75.	29. 57	74.	3. 11	72.	36. 7	71.	8. 44	69.	41. 0	68.	12. 56
17		66.	44. 32	63.	15. 4	63.	46. 37	62.	17. 6	60.	47. 14	59.	17. 0	57.	46. 22	56.	15. 23
18		54.	44. 0	53.	12. 13	51.	40. 3	50.	7. 30	48.	34. 33	47.	1. 13	45.	27. 29	43.	53. 23
19		42.	18. 54	40.	44. 2	39.	8. 47										
23	Spica π	53.	16. 49	51.	24. 37	49.	32. 30	47.	40. 29	45.	48. 33	43.	56. 45	42.	5. 5	40.	13. 35
24		38.	22. 13	36.	31. 2	34.	40. 3	32.	49. 17	30.	58. 42	29.	8. 22	27.	18. 16	25.	28. 25
25		23.	38. 51														
26	Antares.	69.	15. 43	67.	26. 52	65.	38. 20	63.	50. 5	62.	2. 9	60.	14. 31	58.	27. 12	56.	40. 13
27		54.	53. 33	53.	7. 13	51.	21. 15	49.	35. 38	47.	50. 22	46.	5. 28	44.	20. 57	42.	36. 49
28		40.	53. 4	39.	9. 42	37.	26. 44	35.	44. 13	34.	2. 7	32.	20. 29	30.	39. 19	28.	58. 38
29		27.	18. 28														
29	α Aquilæ.	81.	15. 17	79.	42. 59	78.	11. 4	76.	39. 31	75.	8. 23	73.	37. 39	72.	7. 23	70.	37. 33
30		69.	8. 10	67.	39. 16	66.	10. 52	64.	43. 0	63.	15. 38						
30	Fomal- haut.	85.	25. 5	83.	57. 42	82.	30. 36	81.	3. 48	91.	17. 14	89.	48. 49	88.	20. 39	86.	52. 44
31		73.	54. 24							79.	37. 17	78.	11. 5	76.	45. 11	75.	19. 38
A. 1																	

Distances of γ 's Center from Sun, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	109. 11. 59	110. 47. 22	112. 22. 31	113. 57. 28	115. 32. 11	117. 6. 41	118. 40. 59	120. 15. 3
2		121. 48. 55							
1	Regulus.	62. 18. 6	64. 0. 13	65. 42. 8	67. 23. 51	69. 5. 23	70. 46. 43	72. 27. 50	74. 8. 47
2		75. 49. 32							
3		21. 48. 23	23. 29. 21	25. 10. 7	26. 50. 42	28. 31. 4	30. 11. 15	31. 51. 14	33. 31. 1
4	Spica μ	35. 10. 37	36. 50. 1	38. 29. 13	40. 8. 13	41. 47. 1	43. 25. 37	45. 4. 2	46. 42. 14
5		48. 20. 15	49. 58. 4	51. 35. 41	53. 13. 6	54. 50. 19	56. 27. 20	58. 4. 10	59. 40. 48
6		61. 17. 14	62. 53. 28	64. 29. 30	66. 5. 21	67. 41. 0			
7		28. 57. 25	30. 30. 26	32. 3. 24	33. 36. 18	35. 9. 10	36. 41. 54	38. 14. 30	39. 47. 1
8	Antares.	41. 19. 24	42. 51. 41	44. 23. 49	45. 55. 50	47. 27. 42	48. 59. 25	50. 30. 59	52. 2. 25
9		53. 33. 42	55. 4. 50	56. 35. 50	58. 6. 41	59. 37. 25	61. 7. 58	62. 38. 24	64. 8. 41
10		65. 38. 51	67. 8. 52	68. 38. 46	70. 8. 32	71. 38. 11	73. 7. 42	74. 37. 7	76. 6. 25
11		77. 35. 37	79. 4. 42	80. 33. 42	82. 2. 37	83. 31. 26	85. 0. 10	86. 28. 49	87. 57. 25
12		89. 25. 57	90. 54. 25	92. 22. 51	93. 51. 14	95. 19. 35			
13	Aquilæ.	52. 17. 19	53. 32. 45	54. 48. 39	56. 5. 0	57. 21. 48	58. 34. 9	59. 56. 30	61. 14. 24
		62. 32. 40	63. 51. 16	65. 10. 11	66. 29. 25	67. 48. 57	69. 8. 45	70. 28. 49	71. 49. 11

XI.		J U L Y 1789.										[83]					
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
14	α Aquilæ.	73. 9. 49	74. 30. 44			75. 51. 55	77. 13. 21			78. 35. 4	79. 57. 2			81. 19. 14	82. 41. 41		
15		84. 4. 23															
15		36. 16. 58	37. 39. 56			39. 3. 33	40. 27. 51			41. 52. 53	43. 18. 33			44. 44. 49	46. 11. 41		
16	α Pegasi.	47. 39. 9	49. 7. 9			50. 35. 42	52. 4. 46			53. 34. 23	55. 4. 28			56. 35. 4	58. 6. 8		
17		59. 37. 43	61. 9. 47			62. 42. 19	64. 15. 20			65. 48. 50							
17										22. 19. 1	23. 50. 33			25. 23. 0	26. 56. 25		
18		28. 30. 50	30. 6. 5			31. 42. 6	33. 18. 52			34. 56. 24	36. 34. 32			38. 13. 15	39. 52. 37		
19	α Arietis.	41. 32. 35	43. 13. 6			44. 54. 9	46. 35. 44			48. 17. 51	50. 0. 27			51. 43. 33	53. 27. 7		
20		55. 11. 10	56. 55. 42			58. 40. 39	60. 26. 3			62. 11. 52	63. 58. 5			65. 44. 40	67. 31. 38		
21		69. 18. 59															
25		39. 58. 25	41. 41. 41			43. 24. 47	45. 7. 44			46. 50. 30	48. 33. 5			50. 15. 27	51. 57. 37		
26		53. 39. 34	55. 21. 17			57. 2. 44	58. 43. 56			60. 24. 52	62. 5. 31			63. 45. 52	65. 25. 57		
27		67. 5. 44	68. 45. 14			70. 24. 26	72. 3. 19			73. 41. 54	75. 20. 9			76. 58. 4	78. 35. 41		
28	The Sun.	80. 12. 59	81. 49. 58			83. 26. 38	85. 2. 59			86. 39. 1	88. 14. 42			89. 50. 5	91. 25. 8		
29		92. 59. 53	94. 34. 19			96. 8. 27	97. 42. 16			99. 15. 47	100. 49. 0			102. 21. 54	103. 54. 31		
30		105. 26. 50	106. 58. 51			108. 30. 36	110. 2. 3			111. 33. 13	113. 4. 6			114. 34. 44	116. 5. 5		
31		117. 35. 10	119. 4. 59			120. 34. 32											
29		18. 45. 20	20. 27. 12			22. 8. 46	23. 50. 3			25. 31. 2	27. 11. 44			28. 52. 8	30. 32. 16		
30		32. 12. 6	33. 51. 39			35. 30. 54	37. 9. 54			38. 48. 37	40. 27. 4			42. 5. 16	43. 43. 12		
31	Spica π	45. 20. 53	46. 58. 18			48. 35. 28	50. 12. 23			51. 49. 4	53. 25. 31			55. 1. 45	56. 37. 46		
A. 1		58. 13. 34															

The Satellites of JUPITER will not be visible this
Month, JUPITER being too near
the SUN.

I. AUGUST 1789. [85]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			Full Moon — 5. 10. 27
			Last Quarter — 13. 14. 5
			New Moon — 20. 11. 18
			First Quarter — 27. 3. 14
			Other Phenomena.
			D. H. M.
1	Sa.	Lammas-Day.	1. 21. 25 ☾ 1 ad μ ♄
2	Su.	8th Sunday after Trinity.	4. 9. 21 ☾ β ♄
3	M.		10. 6. 16 ☾ δ ♄
4	Tu.		12. ☽ δ ☿ diff. Lat.
5	W.		36'
6	Th.	Transfig. of our Lord.	13. ☽ χ ♄ diff. Lat.
7	F.	Name of Jesus.	3'
8	Sa.		15. 7. 32 ☾ ι ♄
9	Su.	9th Sunday after Trinity.	21. 51 ☾ ζ ♄
10	M.	St. Lawrence.	16. ☽ σ ♄ diff. Lat.
11	Tu.	Prs. of Brunswick born.	22'
12	W.	Pr. of Wales born, 1762.	18. 50 ☾ ν ♄
13	Th.		17. ☽ ♄ diff. Lat.
14	F.		43'
15	Sa.		22. 7. 3 ☾ enters ♍
16	Su.	10th Sunday after Trinity.	23. ☽ β ♍ diff. Lat.
17	M.	[Pr. Frederick born.	29'
18	Tu.		23. 17 ☾ α ♍
19	W.		25. 11. 12 ☾ α ♄
20	Th.		21. 32 ☾ ι ad ♄
21	F.	Pr. W. Henry born.	26. 9. 28 ☾ κ ♄
22	Sa.		14. 20 ☾ λ ♄
23	Su.	11th Sunday after Trinity.	19. 14 ☾ β ♍
24	M.	St. Bartholomew.	21. 51 ☾ ν ♍
25	Tu.		28. 3. 47 ☾ ε Ophiuchi.
26	W.		29. ☽ η ♍ diff. Lat.
27	Th.		24'
28	F.	St. Augustine.	3. 6 ☾ ι ad μ ♄
29	Sa.	St. John Bapt. beheaded.	31. 15. 17 ☾ β ♄
30	Su.	12th Sunday after Trinity.	
31	M.		

[86]		AUGUST 1789.				II.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time Add.	Diff.
		S. D.M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Sa.	4. 9.32.13	8. 47.55,7	17.53. 2	5.52,2	4,2
2	Su.	4. 10.29.40	8. 51.48,1	17.37.35	5.48,0	4,8
3	M.	4. 11.27. 8	8. 55.39,9	17.21.51	5.43,2	5,3
4	Tu.	4. 12.24.36	8. 59.31,1	17. 5.51	5.37,9	5,9
5	W.	4. 13.22. 5	9. 3.21,7	16.49.34	5.32,0	6,6
6	Th.	4. 14.19.35	9. 7.11,6	16.33. 0	5.25,4	7,2
7	F.	4. 15.17. 7	9. 11. 1,0	16.16.10	5.18,2	7,8
8	Sa.	4. 16.14.40	9. 14.49,7	15.59. 5	5.10,4	8,3
9	Su.	4. 17.12.14	9. 18.37,9	15.41.44	5. 2,1	8,8
10	M.	4. 18. 9.50	9. 22.25,6	15.24. 8	4.53,3	9,4
11	Tu.	4. 19. 7.27	9. 26.12,8	15. 6.17	4.43,9	9,9
12	W.	4. 20. 5. 5	9. 29.59,4	14.48.12	4.34,0	10,4
13	Th.	4. 21. 2.45	9. 33.45,5	14.29.52	4.23,6	11,0
14	F.	4. 22. 0.27	9. 37.31,0	14.11.18	4.12,6	11,5
15	Sa.	4. 22.58.11	9. 41.16,1	13.52.30	4. 1,1	12,0
16	Su.	4. 23.55.56	9. 45. 0,6	13.33.29	3.49,1	12,5
17	M.	4. 24.53.43	9. 48.44,6	13.14.15	3.36,6	13,0
18	Tu.	4. 25.51.31	9. 52.28,1	12.54.48	3.23,6	13,5
19	W.	4. 26.49.21	9. 56.11,2	12.35. 9	3.10,1	14,0
20	Th.	4. 27.47.12	9. 59.53,8	12.15.18	2.56,1	14,4
21	F.	4. 28.45. 5	10. 3.35,9	11.55.15	2.41,7	14,8
22	Sa.	4. 29.43. 0	10. 7.17,6	11.35. 1	2.26,9	15,2
23	Su.	5. 0.40.56	10. 10.58,9	11.14.36	2.11,7	15,7
24	M.	5. 1.38.53	10. 14.39,7	10.54. 0	1.56,0	16,2
25	Tu.	5. 2.36.52	10. 18.20,0	10.33.14	1.39,8	16,6
26	W.	5. 3.34.52	10. 21.59,9	10.12.17	1.23,2	17,0
27	Th.	5. 4.32.53	10. 25.39,4	9.51.11	1. 6,2	17,3
28	F.	5. 5.30.55	10. 29.18,5	9.29.56	0.48,9	17,7
29	Sa.	5. 6.28.59	10. 32.57,3	9. 8.32	0.31,2	18,0
30	Su.	5. 7.27. 4	10. 36.35,8	8.46.59	0.13,2	18,4
31	M.	5. 8.25.11	10. 40.14,0	8.25.18	Sub.5,2	

III.

AUGUST 1789.

[87]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 49,0	1. 6,5	2. 23,6	0.006229	7. 24. 42
7	15. 49,9	1. 6,0	2. 23,9	0.005817	7. 24. 23
13	15. 51,0	1. 5,5	2. 24,3	0.005367	7. 24. 4
19	15. 52,2	1. 5,0	2. 24,6	0.004860	7. 23. 45
25	15. 53,3	1. 4,7	2. 25,0	0.004280	7. 23. 26

The Eclipses of the Satellites of JUPITER will not be
visible this Month, JUPITER being too
near the Sun.

[88]

AUGUST 1789.

IV.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

Greatest Elong. 4^d. M E R C U R Y. Sup. δ 28^d. 11^h 14^m.

1	11. 29. 17	5. 6 S	3. 20. 46	2. 9 S	19. 44 N	22. 40
4	0. 14. 28	3. 40	3. 23. 20	1. 21	20. 7	22. 41
7	1. 1. 1	1. 48 S	3. 26. 47	0. 35 S	20. 15	22. 45
10	1. 18. 46	0. 22 N	4. 1. 4	0. 6 N	20. 3	22. 53
13	2. 7. 24	2. 35	4. 6. 1	0. 42	19. 28	23. 4
16	2. 26. 20	4. 33	4. 11. 30	1. 10	18. 29	23. 16
19	3. 14. 55	6. 1	4. 17. 17	1. 30	17. 6	23. 29
22	4. 2. 34	6. 49	4. 23. 13	1. 42	15. 24	23. 41
25	4. 18. 54	6. 59	4. 29. 11	1. 46	13. 26	23. 53
28	5. 3. 49	6. 40	5. 5. 4	1. 43	11. 16	0. 1
31	5. 17. 20	5. 59	5. 10. 49	1. 37	9. 1	0. 12

V E N U S.

1	5. 21. 2	3. 22 N	4. 26. 35	1. 29 N	14. 4 N	1. 9
7	6. 0. 45	3. 16	5. 3. 56	1. 28	11. 26	1. 14
13	6. 10. 27	3. 3	5. 11. 18	1. 24	8. 37	1. 19
19	6. 20. 8	2. 46	5. 18. 40	1. 17	5. 40	1. 24
25	6. 29. 47	2. 24	5. 26. 1	1. 8	2. 38	1. 29

M A R S.

1	1. 19. 16	0. 2 N	2. 20. 28	0. 2 N	23. 9 N	20. 30
7	1. 22. 34	0. 9	2. 24. 27	0. 7	23. 28	20. 24
13	1. 25. 50	0. 15	2. 28. 24	0. 12	23. 39	20. 18
19	1. 29. 4	0. 21	3. 2. 18	0. 17	23. 44	20. 13
25	2. 2. 16	0. 27	3. 6. 8	0. 23	23. 42	20. 8

J U P I T E R. δ 2^d. 12^h.

1	4. 10. 52	0. 42 N	4. 10. 39	0. 35 N	18. 9 N	0. 5
7	4. 11. 20	0. 43	4. 11. 58	0. 36	17. 48	23. 45
13	4. 11. 49	0. 43	4. 13. 17	0. 36	17. 26	23. 27
19	4. 12. 17	0. 44	4. 14. 36	0. 37	17. 4	23. 10
25	4. 12. 46	0. 44	4. 15. 54	0. 37	16. 41	22. 53

S A T U R N.

1	11. 18. 32	2. 6 S	11. 22. 40	2. 17 S	5. 0 S	14. 46
7	11. 18. 44	2. 6	11. 22. 23	2. 18	5. 8	14. 22
13	11. 18. 56	2. 6	11. 22. 2	2. 19	5. 17	13. 58
19	11. 19. 8	2. 7	11. 21. 40	2. 20	5. 27	13. 34
25	11. 19. 19	2. 7	11. 21. 15	2. 21	5. 38	13. 11

V. AUGUST 1789. [89]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sa.	8. 19. 0.32	8. 25.20.39	1.59.35 N	2.29.35 N
2	Su.	9. 1.37.51	9. 7.52.20	2.57.28	3.22.58
3	M.	9. 14. 4.24	9. 20.14. 9	3.45.50	4. 5.55
4	Tu.	9. 26.21.49	10. 2.27.34	4.22.58	4.36.56
5	W.	10. 8.31.30	10. 14.33.45	4.47.37	4.55. 3
6	Th.	10. 20.34.27	10. 26.33.44	4.59. 8	4.59.53
7	F.	11. 2.31.46	11. 8.28.43	4.57.21	4.51.33
8	Sa.	11. 14.24.49	11. 20.20.21	4.42.37	4.30.36
9	Su.	11. 26.15.34	0. 2.10.51	4.15.41	3.57.58
10	M.	0. 8. 6.35	0. 14. 3.10	3.37.39	3.14.53
11	Tu.	0. 20. 1. 9	0. 26. 1. 1	2.49.52	2.22.49
12	W.	1. 2. 3.21	1. 8. 8.43	1.53.57	1.23.32
13	Th.	1. 14.17.45	1. 20.31. 6	0.51.49 N	0.19. 7 N
14	F.	1. 26.49.22	2. 3.13.11	0.14.16 S	0.47.56 S
15	Sa.	2. 9.43. 7	2. 16.19.41	1.21.31	1.54.34
16	Su.	2. 23. 3.19	2. 29.54.19	2.26.34	2.57. 3
17	M.	3. 6.52.49	3. 13.58.49	3.25.24	3.51. 5
18	Tu.	3. 21.11.59	3. 28.31.53	4.13.27	4.32. 5
19	W.	4. 5.57.48	4. 13.28.45	4.46.21	4.55.50
20	Th.	4. 21. 3.38	4. 28.41. 6	5. 0.13	4.59.18
21	F.	5. 6.19.41	5. 13.58. 1	4.53. 1	4.41.31
22	Sa.	5. 21.34.37	5. 29. 8.14	4.25. 2	4. 3.58
23	Su.	6. 6.37.40	6. 14. 2. 1	3.38.52	3.10.17
24	M.	6. 21.20.31	6. 28.32.39	2.38.54	2. 5.23
25	Tu.	7. 5.38.10	7. 12.36.56	1.30.23	0.54.32 S
26	W.	7. 19.29. 3	7. 26.14.44	0.18.24 S	0.17.24 N
27	Th.	8. 2.54.16	8. 9.28. 5	0.52.28 N	1.26.19
28	F.	8. 15.56.36	8. 22.20.19	1.58.35	2.28.56
29	Sa.	8. 28.39.42	9. 4.55.14	2.57. 5	3.22.46
30	Su.	9. 11. 7.23	9. 17.16.34	3.45.47	4. 5.58
31	M.	9. 23.23.13	9. 29.27.38	4.23. 9	4.37.15

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascension at Noon.	D's Right Ascension at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	11	8. 43	258. 13	265. 1	21. 2 S	20.54 S
2	Su.	12	9. 34	271. 44	278. 22	20.30	19.51
3	M.	13	10. 23	284. 52	291. 15	18.58	17.53
4	Tu.	14	11. 10	297. 31	303. 39	16.36	15. 8
5	W.	15	11. 56	309. 40	315. 34	13.31	11.46
6	Th.	16	12. 40	321. 22	327. 5	9.55	7.58
7	F.	17	13. 22	332. 43	338. 18	5.57	3.53 S
8	Sa.	18	14. 4	343. 50	349. 21	1.48 S	0.19 N
9	Su.	19	14. 46	354. 52	0.25	2.25 N	4.30
10	M.	20	15. 29	6. 0	11.39	6.33	8.32
11	Tu.	21	16. 13	17. 24	23.14	10.27	12.16
12	W.	22	17. 0	29. 12	35.18	13.59	15.33
13	Th.	23	17. 49	41. 34	47.59	16.58	18.12
14	F.	24	18. 41	54. 35	61.20	19.14	20. 2
15	Sa.	25	19. 35	68. 16	75.21	20.35	20.52
16	Su.	26	20. 32	82. 34	89.54	20.51	20.31
17	M.	27	21. 30	97. 18	104.46	19.52	18.54
18	Tu.	28	22. 28	112. 14	119.42	17.37	16. 2
19	W.	29	23. 25	127. 8	134.31	14.11	12. 4
20	Th.	1	0	141. 50	149. 5	9.45	7.16
21	F.	2	0. 22	156. 17	163.26	4.40 N	1.59 N
22	Sa.	3	1. 18	170. 31	177.35	0.43 S	3.23 S
23	Su.	4	2. 13	184. 38	191.40	5.59	8.28
24	M.	5	3. 7	198. 42	205.45	10.47	12.55
25	Tu.	6	4. 1	212. 49	219.52	14.50	16.30
26	W.	7	4. 56	226. 56	234. 0	17.55	19. 3
27	Th.	8	5. 51	241. 2	248. 1	19.54	20.28
28	F.	9	6. 44	254. 57	261.49	20.45	20.46
29	Sa.	10	7. 36	268. 34	275.14	20.31	20. 0
30	Su.	11	8. 26	281. 46	288.11	19.15	18.17
31	M.	12	9. 14	294. 29	300.38	17. 7	15.46

VII. AUGUST 1789. [91]

Days of the Month.	Days of the Week.	Semidr. D at Noon. M. S.	Semidr. D at Mid-night. M. S.	Hor. Par. D at Noon. M. S.	Hor. Par. D at Midnight. M. S.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
1	Sa.	15. 20	15. 16	56. 18	56. 2	5048	5068
2	Su.	15. 12	15. 8	55. 47	55. 32	5087	5107
3	M.	15. 4	15. 1	55. 19	55. 6	5124	5141
4	Tu.	14. 58	14. 55	54. 55	54. 45	5155	5169
5	W.	14. 53	14. 51	54. 36	54. 28	5181	5191
6	Th.	14. 49	14. 47	54. 21	54. 16	5201	5207
7	F.	14. 46	14. 45	54. 12	54. 9	5213	5217
8	Sa.	14. 45	14. 45	54. 7	54. 8	5219	5218
9	Su.	14. 46	14. 47	54. 10	54. 14	5215	5210
10	M.	14. 48	14. 51	54. 20	54. 28	5202	5191
11	Tu.	14. 53	14. 56	54. 38	54. 50	5178	5162
12	W.	15. 1	15. 5	55. 5	55. 22	5142	5120
13	Th.	15. 10	15. 16	55. 41	56. 3	5095	5067
14	F.	15. 23	15. 30	56. 27	56. 52	5036	5004
15	Sa.	15. 37	15. 44	57. 18	57. 46	4971	4936
16	Su.	15. 52	16. 0	58. 14	58. 43	4901	4865
17	M.	16. 8	16. 15	59. 12	59. 39	4830	4797
18	Tu.	16. 22	16. 29	60. 5	60. 28	4765	4737
19	W.	16. 34	16. 38	60. 48	61. 4	4714	4694
20	Th.	16. 42	16. 44	61. 16	61. 23	4680	4672
21	F.	16. 44	16. 44	61. 26	61. 24	4669	4671
22	Sa.	16. 42	16. 39	61. 17	61. 6	4679	4692
23	Su.	16. 35	16. 29	60. 50	60. 31	4711	4734
24	M.	16. 23	16. 17	60. 9	59. 45	4760	4789
25	Tu.	16. 10	16. 3	59. 20	58. 53	4820	4853
26	W.	15. 56	15. 48	58. 27	58. 0	4885	4918
27	Th.	15. 41	15. 34	57. 34	57. 9	4951	4983
28	F.	15. 28	15. 22	56. 46	56. 23	5012	5041
29	Sa.	15. 16	15. 11	56. 2	55. 43	5068	5093
30	Su.	15. 6	15. 2	55. 26	55. 10	5115	5136
31	M.	14. 58	14. 55	54. 57	54. 45	5153	5169

Distances of γ 's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1		90. 48. 17		89. 15. 54		87. 43. 44		86. 11. 46		84. 40. 0		83. 8. 27		81. 37. 6		80. 5. 59	
2		78. 35. 4		77. 4. 23		75. 33. 55		74. 3. 40		72. 33. 38		71. 3. 49		69. 34. 15		68. 4. 54	
3	α Pegasi.	66. 35. 47		65. 6. 55		63. 38. 18		62. 9. 56		60. 41. 49		59. 13. 57		57. 46. 22		56. 19. 4	
4		54. 52. 3		53. 25. 19		51. 58. 55		50. 32. 51		49. 7. 6		47. 41. 42		46. 16. 42		44. 52. 8	
5		43. 27. 58		42. 4. 16		40. 41. 5		39. 18. 24		37. 56. 14							
5										79. 29. 12		78. 0. 10		76. 31. 13		75. 2. 24	
6		73. 33. 42		72. 5. 6		70. 36. 36		69. 8. 13		67. 39. 55		66. 11. 43		64. 43. 36		63. 15. 36	
7	α Arietis.	61. 47. 41		60. 19. 53		58. 52. 10		57. 24. 33		55. 57. 1		54. 29. 35		53. 2. 13		51. 34. 58	
8		50. 7. 48		48. 40. 43		47. 13. 44		45. 46. 51		44. 20. 3		42. 53. 22		41. 26. 48		40. 0. 21	
9		38. 34. 0															
9		71. 10. 16		69. 41. 54		68. 13. 30		66. 45. 6		65. 16. 39		63. 48. 10		62. 19. 39		60. 51. 4	
10		59. 22. 27		57. 53. 46		56. 25. 1		54. 56. 11		53. 27. 16		51. 58. 16		50. 29. 11		48. 59. 59	
11		47. 30. 41		46. 1. 17		44. 31. 45		43. 2. 6		41. 32. 19		40. 2. 23		38. 32. 20		37. 2. 8	
12	Aldebaran.	35. 31. 48		34. 1. 18		32. 30. 41		30. 59. 55		29. 29. 2		27. 57. 57		26. 26. 47		24. 55. 32	
13		23. 24. 12		21. 52. 49		20. 21. 27		18. 50. 5		17. 18. 43							
11		119. 3. 58		117. 41. 41		116. 19. 17		114. 56. 42		113. 33. 57		112. 11. 2		110. 47. 55		109. 24. 37	
12		108. 1. 7		106. 37. 25		105. 13. 30		103. 49. 21		102. 24. 59		101. 0. 23		99. 35. 31		98. 10. 23	
13	The Sun.	96. 44. 59		95. 19. 18		93. 53. 20		92. 27. 4		91. 0. 30		89. 33. 38		88. 5. 26		86. 38. 56	
14		85. 11. 5		83. 42. 54		82. 14. 21		80. 45. 27		79. 16. 12		77. 46. 34		76. 16. 33		74. 46. 9	

Distances of γ 's Center from Sun, and from Stars west of her.

[94.]		AUGUST 1789.										X.				
Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.								
Days.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.				
1 Spica μ	58. 13. 39	59. 49. 8	61. 24. 29	62. 59. 37	64. 34. 33	66. 9. 17	67. 43. 49	69. 18. 10								
2	70. 52. 19	72. 26. 16	74. 0. 3	75. 33. 38	77. 7. 2											
3	38. 7. 19	39. 38. 49	41. 10. 14	42. 41. 33	32. 0. 31	33. 32. 20	35. 4. 4	36. 35. 44								
4	50. 16. 40	51. 47. 23	53. 18. 0	54. 48. 31	44. 12. 47	45. 43. 54	47. 14. 55	48. 45. 51								
5 Antares.	62. 19. 30	63. 49. 23	65. 19. 11	66. 48. 53	56. 18. 55	57. 49. 13	59. 19. 21	60. 49. 30								
6	74. 15. 59	75. 45. 8	77. 14. 13	78. 43. 13	68. 18. 29	69. 47. 59	71. 17. 24	72. 46. 44								
7	86. 7. 7	87. 35. 42	89. 4. 14	90. 32. 42	80. 12. 8	81. 40. 59	83. 9. 46	84. 38. 29								
8	97. 54. 25															
9 α Aquilæ.	49. 35. 32	50. 49. 53	52. 4. 44	53. 20. 4	54. 35. 50	55. 52. 3	57. 8. 38	58. 25. 38								
10	59. 42. 59	61. 0. 40	62. 18. 39	63. 36. 56	64. 55. 32	66. 14. 23	67. 33. 29	68. 52. 50								
11	70. 12. 26	71. 32. 15	72. 52. 17	74. 12. 33	75. 33. 1	76. 53. 42	78. 14. 35	79. 35. 39								
12	80. 56. 56	82. 18. 24	83. 40. 3	85. 1. 53	86. 23. 54											
13 α Pegasi	44. 10. 55	45. 35. 57	47. 1. 28	48. 27. 30	38. 36. 21	39. 59. 8	41. 22. 30	42. 46. 25								
14	55. 44. 31	57. 13. 14	58. 42. 22	60. 11. 56	49. 54. 1	51. 20. 58	52. 48. 22	54. 16. 13								
	67. 46. 0															

Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
Days.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
14	24. 14. 6	25. 44. 18	27. 15. 16	28. 47. 5	30. 19. 44	31. 53. 8	33. 27. 13	35. 1. 59
15	36. 37. 27	38. 13. 29	39. 50. 5	41. 27. 18	43. 5. 4	44. 43. 23	46. 22. 15	48. 1. 39
16	49. 41. 35	51. 22. 2	53. 3. 0	54. 44. 30	56. 26. 33			
16					23. 7. 33	24. 49. 47	26. 32. 39	28. 16. 7
17	30. 0. 12	31. 44. 51	33. 30. 3	35. 15. 45	37. 2. 2	38. 48. 46	40. 35. 58	42. 23. 38
18	44. 11. 46	46. 0. 20	47. 49. 18	49. 38. 41	51. 28. 28	53. 18. 39	55. 9. 10	57. 0. 1
19	58. 51. 15							
23	49. 44. 45	51. 25. 40	53. 6. 14	54. 46. 27	56. 26. 18	58. 5. 46	60. 21. 53	62. 3. 28
24	63. 1. 54	64. 39. 49	66. 17. 21	67. 54. 29	69. 31. 14	71. 7. 34	72. 43. 31	74. 19. 3
25	75. 54. 12	77. 28. 57	79. 3. 19	80. 37. 17	82. 10. 52	83. 44. 4	85. 16. 53	86. 49. 20
26	88. 21. 24	89. 53. 6	91. 24. 28	92. 55. 27	94. 26. 6	95. 56. 24	97. 26. 22	98. 56. 1
27	100. 25. 19	101. 54. 18	103. 22. 59	104. 51. 21	106. 19. 25	107. 47. 11	109. 14. 41	110. 41. 54
28	112. 8. 51	113. 35. 31	115. 1. 57	116. 28. 7	117. 54. 2	119. 19. 43	120. 45. 10	
29	42. 5. 23	43. 44. 43	45. 23. 40	47. 2. 17	48. 40. 32	50. 18. 26	51. 56. 1	53. 33. 15
29	55. 10. 10	56. 46. 46	58. 23. 4	59. 59. 4	61. 34. 46	63. 10. 10	64. 45. 18	66. 20. 9
29	67. 54. 44							
29	23. 3. 46	24. 35. 14	26. 6. 41	27. 38. 9	29. 9. 39	30. 41. 6	32. 12. 30	33. 43. 50
30	35. 15. 7	36. 46. 15	38. 17. 17	39. 48. 15	41. 19. 7	42. 49. 51	44. 20. 28	45. 50. 58
31	47. 21. 22	48. 51. 39	50. 21. 49	51. 51. 53	53. 21. 50	54. 51. 42	56. 21. 28	57. 51. 7
S 1	59. 20. 41							

The Satellites of JUPITER will not be visible this
Month, being too near the SUN.

I. SEPTEMBER 1789. [97]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
			Full Moon --	4. 2. 7
			Last Quarter --	12. 2. 54
			New Moon --	18. 19. 6
			First Quarter --	25. 15. 48
			Other Phenomena.	
			D.H.M.	
			6.12.26	☾ ☽ ✕
			9	☽ ☽ ☽ d. L. 49'
			11.15.12	☾ ☽ ☽
			12. 5.55	☾ ☽ ☽
			13. 3.34	☾ ☽ ☽
			15.15.29	Im. of ☽ ad ☽ ☽
				*2'½ N. of ☽'s cent.
			16.25½	Em. * 1½ N.
			18. 6	☾ ☽ ad ☽ ☽
			22 14	☾ ☽ ☽
			20. 9.28	☾ ☽ ☽
			21.20.19	☾ ☽ ☽
			22. 3.28	☾ enters ☽
			17.53	☾ ☽ ☽
			22.34	☾ ☽ ☽
			23. 3.19	☾ ☽ ☽
			24.10.58	☾ ☽ Serp.
			25.	☽ ☽ ☽ d. L. 39'
			9.49	☾ ☽ ad ☽ ☽
			27.21.27	☾ ☽ ☽
1	Tu.	Giles.		
2	W.	Lond. burnt 1666, O.S		
3	Th.			
4	F.			
5	Sa.			
6	Su.	13th Sunday after Trinity		
7	M.	Enurchus.		
8	Tu.	Nativity of B. V. Mary.		
9	W.			
10	Th.			
11	F.			
12	Sa.			
13	Su.	14th Sunday after Trinity.		
14	M.	Holy Cross.		
15	Tu.			
16	W.			
17	Th.	Lambert.		
18	F.			
19	Sa.			
20	Su.	15th Sunday after Trinity.		
21	M.	St. Matthew.		
22	Tu.	K. Geo. III. crown'd 1761.		
23	W.			
24	Th.			
25	F.			
26	Sa.	St. Cyprian.		
27	Su.	16th Sunday after Trinity.		
28	M.			
29	Tu.	St. Mich. Pri. Char. Aug.		
30	W.	St. Jerome. [born.		

[98] SEPTEMBER 1789. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Tu.	5. 9.23.19	10.43.51,8	8. 3.29	0.23,8	19,2
2	W.	5. 10.21.28	10.47.29,2	7.41.31	0.43,0	19,3
3	Th.	5. 11.19.39	10.51. 6,4	7.19.27	1. 2,3	19,6
4	F.	5. 12.17.51	10.54.43,3	6.57.16	1. 21,9	19,8
5	Sa.	5. 13.16. 5	10.58.20,0	6.34.58	1. 41,7	20,0
6	Su.	5. 14.14.21	11. 1.56,5	6.12.33	2. 1,7	20,2
7	M.	5. 15.12.39	11. 5.32,8	5.50. 2	2. 21,9	20,4
8	Tu.	5. 16.10.59	11. 9. 8,9	5.27.25	2. 42,3	20,5
9	W.	5. 17. 9.21	11.12.44,9	5. 4.42	3. 2,8	20,6
10	Th.	5. 18. 7.46	11.16.20,8	4.41.54	3. 23,4	20,8
11	F.	5. 19. 6.12	11.19.56,6	4.19. 1	3. 44,2	20,8
12	Sa.	5. 20. 4.41	11.23.32,2	3.56. 3	4. 5,0	20,9
13	Su.	5. 21. 3.13	11.27. 7,8	3.33. 1	4. 25,9	20,9
14	M.	5. 22. 1.45	11.30.43,4	3. 9.55	4. 46,8	20,9
15	Tu.	5. 23. 0.21	11.34.19,0	2.46.45	5. 7,7	20,9
16	W.	5. 23.58.59	11.37.54,6	2.23.32	5. 28,6	20,9
17	Th.	5. 24.57.39	11.41.30,2	2. 0.16	5. 49,5	20,9
18	F.	5. 25.56.21	11.45. 5,8	1.36.57	6. 10,4	20,8
19	Sa.	5. 26.55. 6	11.48.41,5	1.13.36	6. 31,2	20,8
20	Su.	5. 27.53.52	11.52.17,2	0.50.13	6. 52,0	20,7
21	M.	5. 28.52.40	11.55.53,0	0.26.48	7. 12,7	20,6
22	Tu.	5. 29.51.30	11.59.28,9	0. 3.23 SOUTH.	7. 33,3	20,6
23	W.	6. 0.50.22	12. 3. 4,8	0.20. 3	7. 53,9	20,4
24	Th.	6. 1.49.15	12. 6.40,9	0.43.30	8. 14,3	20,3
25	F.	6. 2.48.10	12.10.17,1	1. 6.55	8. 34,6	20,1
26	Sa.	6. 3.47. 7	12.13.53,5	1.30.23	8. 54,7	19,9
27	Su.	6. 4.46. 5	12.17.30,1	1.53.48	9. 14,6	19,7
28	M.	6. 5.45. 5	12.21. 6,9	2.17.13	9. 34,3	19,5
29	Tu.	6. 6.44. 7	12.24.43,9	2.40.36	9. 53,8	19,3
30	W.	6. 7.43.11	12.28.21,2	3. 3.58	10. 13,1	

III. SEPTEMBER 1789. [99]

Days of the Month.	Semidia- meter of the Sun.	Time of Do- passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 55,0	1. 4,3	2. 25,4	0,003528	7. 23. 4
7	15. 56,5	1. 4,0	2. 25,8	0,002864	7. 22. 45
13	15. 58,0	1. 4,0	2. 26,3	0,002184	7. 22. 26
19	15. 59,5	1. 4,0	2. 26,7	0,001472	7. 22. 7
25	16. 1,2	1. 4,1	2. 27,3	0,000720	7. 21. 48

Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	7. 10. 39	3	1. 54. 11	2	20. 42. 10 I
4	1. 39. 46	6	15. 12. 7	3	0. 15. 57 E
5	20. 8. 53	10	4. 30. 3	10	0. 43. 18 I
7	14. 38. 1	13	17. 47. 59	10	4. 17. 8 E
9	9. 7. 10	17	7. 5. 55	17	4. 44. 24 I
11	3. 36. 18	20	20. 23. 50	17	8. 18. 4 E
12	22. 5. 25	24	9. 41. 42	24	8. 45. 21 I
*14	16. 34. 34	27	22. 59. 30	24	12. 18. 56 E
16	11. 3. 41			IV. Satellite.	
18	5. 32. 49			6	2. 9. 23 I
20	0. 1. 55			6	6. 53. 50 E
21	18. 31. 3			22	20. 13. 28 I
23	13. 0. 9			23	0. 58. 39 E
25	7. 29. 14				
27	1. 58. 19				
28	20. 27. 24				
*30	14. 56. 28				

[100] SEPTEMBER 1789. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY.

1	5. 21. 34	5. 42 N	5. 12. 42	1. 34 N	8. 15 N	0. 15
4	6. 3. 29	4. 43	5. 18. 14	1. 21	5. 54	0. 24
7	6. 14. 25	3. 40	5. 23. 35	1. 6	3. 33	0. 33
10	6. 24. 34	2. 33	5. 28. 46	0. 48	1. 13 N	0. 40
13	7. 4. 5	1. 26	6. 3. 48	0. 28	1. 5 S	0. 47
16	7. 13. 7	0. 20 N	6. 8. 40	0. 7 N	3. 20	0. 54
19	7. 21. 47	0. 44 S	6. 13. 23	0. 15 S	5. 31	1. 0
22	8. 0. 12	1. 45	6. 17. 57	0. 37	7. 37	1. 6
25	8. 8. 29	2. 42	6. 22. 23	1. 0	9. 39	1. 11
28	8. 16. 43	3. 36	6. 26. 39	1. 22	11. 34	1. 16
30	8. 22. 14	4. 10	6. 29. 25	1. 36	12. 47	1. 19

VENUS.

1	7. 11. 0	1. 53 N	6. 4. 35	0. 55 N	0. 59 S	1. 34
7	7. 20. 36	1. 23	6. 11. 55	0. 41	4. 5	1. 39
13	8. 0. 9	0. 52	6. 19. 15	0. 26	7. 8	1. 45
19	8. 9. 41	0. 18 N	6. 26. 34	0. 9 N	10. 6	1. 50
25	8. 19. 13	0. 16 S	7. 3. 52	0. 8 S	12. 57	1. 56

MARS.

1	2. 5. 57	0. 34 N	3. 10. 32	0. 29 N	23. 32 N	20. 1
7	2. 9. 5	0. 40	3. 14. 16	0. 35	23. 17	19. 56
13	2. 12. 11	0. 45	3. 17. 55	0. 41	22. 56	19. 50
19	2. 15. 15	0. 51	3. 21. 30	0. 47	22. 31	19. 44
25	2. 18. 17	0. 56	3. 25. 1	0. 53	22. 2	19. 37

JUPITER.

1	4. 13. 19	0. 45 N	4. 17. 23	0. 38 N	16. 15 N	22. 34
7	4. 13. 48	0. 45	4. 18. 39	0. 39	15. 52	22. 17
13	4. 14. 16	0. 46	4. 19. 53	0. 40	15. 30	22. 0
19	4. 14. 45	0. 46	4. 21. 4	0. 41	15. 8	21. 44
25	4. 15. 13	0. 47	4. 22. 14	0. 41	14. 46	21. 27

SATURN. 8 11^d. 20^h.

1	11. 19. 33	2. 7 S	11. 20. 44	2. 22 S	5. 51 S	12. 44
7	11. 19. 45	2. 7	11. 20. 17	2. 22	6. 2	12. 20
13	11. 19. 57	2. 8	11. 19. 49	2. 23	6. 13	11. 57
19	11. 20. 9	2. 8	11. 19. 22	2. 23	6. 24	11. 34
25	11. 20. 21	2. 8	11. 18. 55	2. 23	6. 35	11. 11

V. SEPTEMBER 1789. [101]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D.M.S.
1	Tu.	10. 5.30.11	10. 11.31. 9	4. 48. 7 N	4.55.45 N
2	W.	10. 17.30.48	10. 23.29.17	5. 0. 4	5. 1. 3
3	Th.	10. 29.26.52	11. 5.23.43	4. 58. 45	4.53.11
4	F.	11. 11.20. 3	11. 17.15.57	4. 44. 25	4.32.36
5	Sa.	11. 23.11.39	11. 29. 7.21	4. 17. 48	4. 0.11
6	Su.	0. 5. 3.15	0. 10.59.36	3. 39. 55	3.17.12
7	M.	0. 16.56.40	0. 22.54.49	2. 52. 14	2.25.17
8	Tu.	0. 28.54.20	1. 4.55.42	1. 56. 33	1.26.21
9	W.	1. 10.59.17	1. 17. 5.38	0. 54. 56 N	0.22.36 N
10	Th.	1. 23.15.11	1. 29.28.34	0. 10. 18 S	0.43.27 S
11	F.	2. 5.46.16	2. 12. 8.52	1. 16. 28	1.48.58
12	Sa.	2. 18.36.57	2. 25.10.58	2. 20. 34	2.50.45
13	Su.	3. 1.51.25	3. 8.38.37	3. 19. 7	3.45.10
14	M.	3. 15.32.53	3. 22.34.19	4. 8. 25	4.28.18
15	Tu.	3. 29.42.48	4. 6.58. 9	4. 44. 22	4.56.11
16	W.	4. 14.19.50	4. 21.47.11	5. 3. 18	5. 5.22
17	Th.	4. 29.19.16	5. 6.54.57	5. 2. 13	4.53.43
18	F.	5. 14.32.55	5. 22.11.52	4. 39. 58	4.21.10
19	Sa.	5. 29.50.17	6. 7.26.51	3. 57. 41	3.30. 3
20	Su.	6. 15. 0.11	6. 22.29.11	2. 58. 51	2.24.50
21	M.	6. 29.52.51	7. 7.10.24	1. 48. 41	1.11.13 S
22	Tu.	7. 14.21.21	7. 21.25.19	0. 33. 6 S	0. 4.56 N
23	W.	7. 28.22.12	8. 5.12. 2	0. 42. 19 N	1.18.28
24	Th.	8. 11.55. 3	8. 18.31.31	1. 52. 56	2.25.20
25	F.	8. 25. 1.53	9. 1.26.37	2. 55. 20	3.22.41
26	Sa.	9. 7.46.13	9. 14. 1.14	3. 47. 9	4. 8.36
27	Su.	9. 20.12.12	9. 26.19.41	4. 26. 52	4.41.55
28	M.	10. 2.24.10	10. 8.26.10	4. 53. 38	5. 2. 1
29	Tu.	10. 14.26. 9	10. 20.24.32	5. 7. 1	5. 8.39
30	W.	10. 26.21.47	11. 2.18. 9	5. 6. 55	5. 1.53

[102] S E P T E M B E R 1789. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascens. at Noon.	D's Right Ascens. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	13	10. 0	306. 40	312. 35	14. 15 S	12. 36 S
2	W.	14	10. 44	318. 25	324. 9	10. 50	8. 58
3	Th.	15	11. 27	329. 49	335. 25	7. 0	5. 0
4	F.	16	12. 10	340. 59	346. 31	2. 56 S	0. 51 S
5	Sa.	17	12. 52	352. 3	357. 36	1. 14 N	3. 19 N
6	Su.	18	13. 34	3. 11	8. 48	5. 22	7. 22
7	M.	19	14. 18	14. 30	20. 16	9. 19	11. 10
8	Tu.	20	15. 4	26. 9	32. 9	12. 55	14. 32
9	W.	21	15. 52	38. 16	44. 31	16. 1	17. 19
10	Th.	22	16. 42	50. 54	57. 26	18. 26	19. 21
11	F.	23	17. 35	64. 6	70. 55	20. 2	20. 28
12	Sa.	24	18. 29	77. 50	84. 52	20. 39	20. 33
13	Su.	25	19. 25	91. 58	99. 9	20. 8	19. 26
14	M.	26	20. 21	106. 22	113. 36	18. 26	17. 9
15	Tu.	27	21. 17	120. 51	128. 5	15. 36	13. 46
16	W.	28	22. 13	135. 18	142. 30	11. 42	9. 26
17	Th.	29	23. 8	149. 40	156. 50	7. 0	4. 26 N
18	F.	1	0	163. 59	171. 7	1. 47 N	0. 54 S
19	Sa.	2	0. 4	178. 16	185. 27	3. 34 S	6. 10
20	Su.	3	1. 1	192. 39	199. 53	8. 40	11. 0
21	M.	4	1. 57	207. 8	214. 25	13. 8	15. 2
22	Tu.	5	2. 54	221. 43	229. 1	16. 41	18. 3
23	W.	6	3. 50	236. 17	243. 31	19. 8	19. 54
24	Th.	7	4. 45	250. 41	257. 45	20. 22	20. 33
25	F.	8	5. 39	264. 42	271. 32	20. 27	20. 5
26	Sa.	9	6. 31	278. 13	284. 46	19. 27	18. 37
27	Su.	10	7. 21	291. 10	297. 25	17. 33	16. 18
28	M.	11	8. 8	303. 32	309. 31	14. 52	13. 18
29	Tu.	12	8. 53	315. 23	321. 10	11. 37	9. 49
30	W.	13	9. 37	326. 51	332. 28	7. 56	5. 58

VII. SEPTEMBER 1789. [103]

Days of the Month.	Days of the Week.	Semidr. D at Noon. M. S.	Semidr. D at Midnight. M. S.	Hor. Par. D at Noon. M. S.	Hor. Par. D at Midnight. M. S.	Propor. Lo. at Noon.	Propor. Lo. at Midn.
1	Tu.	14. 52	14. 50	54. 35	54. 25	5182	5195
2	W.	14. 48	14. 46	54. 18	54. 13	5205	5211
3	Th.	14. 45	14. 45	54. 9	54. 6	5217	5221
4	F.	14. 44	14. 44	54. 4	54. 4	5223	5223
5	Sa.	14. 44	14. 45	54. 5	54. 7	5222	5219
6	Su.	14. 46 _s	14. 47	54. 11	54. 16	5214	5207
7	M.	14. 49	14. 51	54. 23	54. 31	5198	5187
8	Tu.	14. 54	14. 57	54. 41	54. 53	5174	5158
9	W.	15. 1	15. 6	55. 7	55. 23	5140	5119
10	Th.	15. 10	15. 15	55. 40	55. 59	5097	5072
11	F.	15. 21	15. 27	56. 20	56. 43	5045	5015
12	Sa.	15. 34	15. 41	57. 7	57. 33	4985	4952
13	Su.	15. 48	15. 56	57. 59	58. 27	4919	4885
14	M.	16. 3	16. 11	58. 54	59. 22	4852	4817
15	Tu.	16. 18	16. 25	59. 48	60. 13	4786	4755
16	W.	16. 31	16. 36	60. 35	60. 54	4729	4707
17	Th.	16. 40	16. 43	61. 10	61. 21	4687	4675
18	F.	16. 45	16. 45	61. 28	61. 30	4666	4664
19	Sa.	16. 45	16. 43	61. 27	61. 19	4668	4677
20	Su.	16. 39	16. 35	61. 6	60. 50	4692	4711
21	M.	16. 29	16. 23	60. 30	60. 6	4735	4764
22	Tu.	16. 16	16. 8	59. 40	59. 13	4795	4828
23	W.	16. 0	15. 52	58. 44	58. 15	4864	4900
24	Th.	15. 44	15. 37	57. 46	57. 18	4936	4971
25	F.	15. 29	15. 22	56. 51	56. 26	5005	5037
26	Sa.	15. 16	15. 11	56. 3	55. 42	5067	5094
27	Su.	15. 6	15. 1	55. 23	55. 7	5119	5140
28	M.	14. 57	14. 54	54. 53	54. 39	5158	5177
29	Tu.	14. 51	14. 48	54. 28	54. 20	5191	5202
30	W.	14. 47	14. 45	54. 14	54. 9	5210	5217

Distances of γ 's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1		88.	24. 40	86.	55. 33	85.	26. 32	83.	57. 37	82.	28. 48	81.	0. 5	79.	31. 27	78.	2. 55
2		76.	34. 28	75.	6. 7	73.	37. 51	72.	9. 40	70.	41. 34	69.	13. 31	67.	45. 32	66.	17. 37
3	α Arietis.	64.	49. 47	63.	22. 2	61.	54. 20	60.	26. 43	58.	59. 10	57.	31. 40	56.	4. 15	54.	36. 53
4		53.	9. 36	51.	42. 22	50.	15. 14	48.	48. 11	47.	21. 13	45.	54. 18	44.	27. 30	43.	0. 47
5		41.	34. 11														
6		74.	12. 44	72.	44. 14	71.	15. 42	69.	47. 9	68.	18. 35	66.	49. 59	65.	21. 22	63.	52. 42
7		62.	24. 1	60.	55. 18	59.	26. 31	57.	57. 43	56.	28. 51	54.	59. 57	53.	30. 59	52.	1. 57
8	Aldebaran.	50.	32. 52	49.	3. 42	47.	34. 28	46.	5. 10	44.	35. 47	43.	6. 20	41.	36. 48	40.	7. 12
9		38.	37. 30	37.	7. 42	35.	37. 49	34.	7. 51	32.	37. 48	31.	7. 39	29.	37. 27	28.	7. 10
10		26.	36. 50	25.	6. 27	23.	36. 2	22.	5. 34	20.	35. 4						
11		57.	20. 40	55.	49. 48	54.	18. 49	52.	47. 40	51.	16. 24	49.	44. 59	48.	13. 27	46.	41. 49
12	Pollux.	45.	10. 4	43.	38. 11	42.	6. 15	40.	34. 17	39.	2. 16	37.	30. 16	35.	58. 18	34.	26. 24
13		32.	54. 33														
14		114.	52. 34	113.	26. 54	112.	0. 58	110.	34. 46	120.	32. 52	119.	8. 9	117.	43. 11	116.	18. 0
15		103.	19. 43	101.	51. 51	100.	23. 40	98.	55. 9	109.	8. 18	107.	41. 35	106.	14. 35	104.	47. 17
16	The Sun.	91.	27. 39	89.	57. 7	88.	26. 11	86.	54. 58	97.	26. 20	95.	57. 11	94.	27. 41	92.	57. 50
17		79.	12. 52	77.	39. 17	76.	5. 18	74.	30. 55	85.	23. 20	83.	51. 18	82.	18. 53	80.	46. 4
18										72.	56. 7	71.	20. 54	69.	45. 16	68.	9. 13

IX. SEPTEMBER 1789. [105]

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
14		66. 32. 46	64. 55. 53	63. 18. 36	61. 40. 54	60. 2. 47	58. 24. 16	56. 45. 21	55. 6. 2
15	The Sun.	53. 26. 19	51. 46. 11	50. 5. 42	48. 24. 50	46. 43. 36	45. 2. 1	43. 20. 5	41. 37. 50
16		39. 55. 15							
20		51. 43. 46	49. 51. 56	48. 0. 25	46. 9. 15	44. 18. 24	42. 27. 57	40. 37. 57	38. 48. 24
21	Antares.	36. 59. 17	35. 10. 39	33. 22. 36	31. 35. 8	29. 48. 16	28. 2. 4	26. 16. 37	24. 31. 55
22		22. 47. 59							
22		76. 45. 49	75. 9. 2	73. 32. 50	71. 57. 11	70. 22. 8	68. 47. 42	67. 13. 56	65. 40. 51
23	α Aquilæ.	64. 8. 26	62. 36. 44	61. 5. 48	59. 35. 38	58. 6. 16	56. 37. 44	55. 10. 5	53. 43. 20
24		52. 17. 29							
24	Fomal- haut.	80. 25. 46	78. 56. 23	77. 27. 30	75. 59. 6	74. 31. 12	73. 3. 49	71. 37. 0	70. 10. 42
25		68. 44. 58	67. 19. 47	65. 55. 13	64. 31. 13	63. 7. 50			
25		72. 31. 36	71. 1. 1	69. 30. 46	68. 0. 53	78. 37. 33	77. 5. 31	75. 33. 51	74. 2. 33
26		62. 36. 40	59. 8. 52	57. 41. 24	56. 14. 17	66. 31. 21	65. 2. 9	63. 33. 19	62. 4. 49
27	α Pegasi.	49. 4. 15	47. 39. 24	46. 14. 58	44. 50. 57	54. 47. 33	53. 21. 9	51. 55. 8	50. 29. 30
28						43. 27. 21			
28						85. 29. 40	84. 0. 50	82. 32. 8	81. 3. 33
29	α Arietis.	79. 35. 6	78. 6. 46	76. 38. 31	75. 10. 23	73. 42. 20	72. 14. 22	70. 46. 29	69. 18. 40
30		67. 50. 57	66. 23. 18	64. 55. 44	63. 28. 13	62. 0. 46	60. 33. 22	59. 6. 2	57. 38. 44
O. I.		56. 11. 29							

[106] SEPTEMBER 1789. X.

Distances of γ 's Center from Sun, and from Stars west of her.

Stars Names.	Days.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	59. 20. 43	60. 50. 12	62. 19. 36	63. 48. 55	65. 18. 9	66. 47. 19	68. 16. 24	69. 45. 25
	2	71. 14. 22	72. 43. 15	74. 12. 4	75. 40. 49	77. 9. 28	78. 38. 11	80. 6. 48	81. 35. 22
	3	83. 3. 52	84. 32. 21	86. 0. 48	87. 29. 13	88. 57. 36	90. 25. 58	91. 54. 19	93. 22. 39
	4	94. 50. 58							
	4	47. 5. 1	48. 18. 19	49. 32. 11	50. 46. 37	52. 1. 38	53. 17. 9	54. 33. 7	55. 49. 32
	5	57. 6. 24	58. 23. 37	59. 41. 11	60. 59. 5	62. 17. 20	63. 35. 51	64. 54. 38	66. 13. 41
α Aquilæ.	6	67. 33. 1	68. 52. 33	70. 12. 19	71. 32. 17	72. 52. 29	74. 12. 52	75. 33. 26	76. 54. 10
	7	78. 15. 6	79. 36. 11	80. 57. 26	82. 18. 49	83. 40. 22	85. 2. 3	86. 23. 51	87. 45. 48
	8	89. 7. 52							
	8	41. 21. 20	42. 44. 48	44. 8. 42	45. 33. 5	46. 57. 53	48. 23. 7	49. 48. 44	51. 14. 46
α Pegasi.	9	52. 41. 11	54. 7. 58	55. 35. 7	57. 2. 36	58. 30. 27	59. 58. 38	61. 27. 8	62. 55. 56
	10	64. 25. 4							
	10	21. 1. 49	22. 27. 39	23. 54. 25	25. 22. 6	26. 50. 43	28. 20. 9	29. 50. 17	31. 21. 8
α Arietis.	11	32. 52. 40	34. 24. 43	35. 57. 19	37. 30. 28	39. 4. 9	40. 38. 20	42. 12. 59	43. 48. 8
	12	45. 23. 46	46. 59. 52	48. 36. 24	50. 13. 23	51. 50. 49			
	12					18. 27. 51	20. 5. 13	21. 43. 12	23. 21. 49
Aldeba- ran.	13	25. 1. 3	26. 40. 53	28. 21. 15	30. 2. 10	31. 43. 38	33. 25. 34	35. 8. 1	36. 50. 56
	14	38. 34. 20	40. 18. 13	42. 2. 33	43. 47. 22	45. 32. 38	47. 18. 21	49. 4. 30	50. 51. 5

XI. SEPTEMBER 1789. [107]

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
15	Aldebaran.	52.	38. 7	54.	25. 35	56.	13. 28	58.	14. 46	59.	50. 28	61.	39. 34	63.	29. 2	65.	18. 54
16		67.	9. 7														
16	Pollux.	26.	40. 40	28.	21. 48	30.	4. 4	31.	47. 30	33.	32. 3	35.	17. 35	37.	3. 53	38.	51. 1
17		40.	38. 52	42.	27. 21	44.	16. 16	46.	5. 38	47.	55. 23						
21	The Sun.	44.	30. 2	46.	9. 15	47.	48. 2	49.	26. 25	51.	4. 23	52.	41. 56	54.	19. 3	55.	55. 44
22		57.	32. 0	59.	7. 49	60.	43. 12	62.	18. 9	63.	52. 40	65.	26. 45	67.	0. 25	68.	33. 39
23		70.	6. 28	71.	38. 51	73.	10. 50	74.	42. 24	76.	13. 34	77.	44. 20	79.	14. 43	80.	44. 43
24		82.	14. 20	83.	43. 34	85.	12. 27	86.	40. 59	88.	9. 10	89.	37. 0	91.	4. 31	92.	31. 43
25		93.	58. 35	95.	25. 8	96.	51. 25	98.	17. 23	99.	43. 5	101.	8. 31	102.	33. 41	103.	58. 36
26		105.	23. 16	106.	47. 41	108.	11. 54	109.	35. 53	110.	59. 39	112.	23. 13	113.	46. 35	115.	9. 47
27		116.	32. 47	117.	55. 37	119.	18. 18	120.	40. 50								
28																	
25	Antares.	32.	0. 51	33.	33. 13	35.	5. 25	36.	37. 28	38.	9. 22	39.	41. 3	41.	12. 34	42.	43. 54
26		44.	15. 4	45.	46. 3	47.	16. 52	48.	47. 30	50.	17. 59	51.	48. 17	53.	18. 27	54.	48. 27
27		56.	18. 18	57.	48. 0	59.	17. 35	60.	47. 2	62.	16. 22	63.	45. 35	65.	14. 42	66.	43. 43
28		68.	12. 37	69.	41. 25	71.	10. 9	72.	38. 48	74.	7. 23	75.	35. 55	77.	4. 23	78.	32. 48
29		80.	1. 10	81.	29. 28	82.	57. 45	84.	25. 59	85.	54. 11	87.	22. 22	88.	50. 33	90.	18. 44
30		91.	46. 55														
O. 1																	

Configurations of the SATELLITES of JUPITER
at a Quarter after Four o'Clock in the Morning.

1		.2	1.	○		.3	.4
2				○	.1	2.	3.
3			1.	○	3.	2.	4.
4		2	○ 3	○	.1		4.
5		3.	1	○ 2			4.
6		.3		○	1.	4.	.2
7	2	○ 3.0		.1	○		
8	1	○	4.	.2	○		.3
9		4.			○ 1	○ 2	3.
10	4.		1.	○	3.	2.	○
11	.4		2	○ 3	○	.1	
12	.4	3.	1	○ 2	○		
13	.4	.3		○	1.	.2	
14		.4	1.	○ 3	○	2.	
15	4.0		2.	○	1.		.3
16	1.0			○	.2	.4	3.
17			1.	○		2	○ 3
18			2.	3.	○	.1	.4
19		3.	.2	1.	○		.4
20		.3		○	1.	.2	4.
21			1	○ 3	○	2.	4.
22		2.		○	1.	.3	4.
23	1.0 2.0			○	4.		.3
24			4.	1.	○	2.	3.
25		4.		2.	3.	○	.1
26		4.	3.	.2	1.	○	
27	4.		.3		○	1	○ 2
28	.4		.3.	1	○	2.	
29	.4		2.		○	1.	.3
30		.4		1	○ 2	○	.3

I. OCTOBER 1789. [109]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
1	Th.	Remigius.	Full Moon —	3. 19. 5
2	F.		Last Quarter —	11. 13. 37
3	Sa.		New Moon —	18. 4. 19
			First Quarter —	25. 8. 8
			Other Phenomena.	
4	Su.	17th Sunday after Trinity.	D.H.M.	
5	M.		1.	♀ α ♄ d.L. 51'.
6	Tu.	Faith,	3. 18. 36	♄ ♄ ♄
7	W.		6.	♄ ♄ ♄ d.L. 42'.
8	Th.		8. 5. 25	♄ ♄ ♄
9	F.	St. Denys.	21. 14	♄ ♄ ♄
10	Sa.	Oxf. and Cam. Ter. beg.	9. 12. 11	♄ ♄ ♄
			10. 10. 17	♄ ♄ ♄
11	Su.	18th Sunday after Trinity.	13. 1. 54	♄ ♄ ♄
12	M.		2. 48	♄ ♄ ♄
13	Tu.	Transf. of K. Edw. Conf.	7. 4	♄ ♄ ♄
14	W.		15. 21. 31	♄ ♄ ♄
15	Th.		16.	♀ ♄ ♄ d.L. 44'.
16	F.		20. 4. 11	♄ ♄ ♄
17	Sa.	Etheldred.	8. 46	♄ ♄ ♄
18	Su.	19th Su. af. Tr. St. Luke.	13. 22	♄ ♄ ♄
19	M.		21. 20. 9	♄ ♄ ♄
20	Tu.		22.	♄ ♄ ♄ d.L. 19'.
21	W.		11. 24	♄ enters ♄
22	Th.		18. 22	♄ ♄ ♄
23	F.		25.	♄ Stationary.
24	Sa.		4. 44	♄ ♄ ♄
		[Acces. Crisp.	31.	♀ ♄ ♄ d.L. 6'.
25	Su.	20th Su. af. Tr. K. Geo. III.	1. 26	♄ ♄ ♄
26	M.	K. Geo. III. procl. 1760.		
27	Tu.			
28	W.	St. Simon and St. Jude.		
29	Th.			
30	F.			
31	Sa.			

[110]		OCTOBER 1789.					H.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.	
1	Th.	6. 8.42.16	12.31.58,6	3.27.18	10.32,0	18,7	
2	F.	6. 9.41.23	12.35.36,4	3.50.35	10.50,7	18,4	
3	Sa.	6. 10.40.33	12.39.14,6	4.13.49	11. 9,1	18,0	
4	Su.	6. 11.39.44	12.42.53,1	4.37. 0	11.27,1	17,7	
5	M.	6. 12.38.57	12.46.31,9	5. 0. 8	11.44,8	17,3	
6	Tu.	6. 13.38.12	12.50.11,1	5.23.12	12. 2,1	16,9	
7	W.	6. 14.37.30	12.53.50,7	5.46.13	12.19,0	16,5	
8	Th.	6. 15.36.50	12.57.36,8	6. 9. 9	12.35,5	16,0	
9	F.	6. 16.36.13	13. 1.11,4	6.32. 0	12.51,5	15,5	
10	Sa.	6. 17.35.38	13. 4.52,4	6.54.46	13. 7,0	14,9	
11	Su.	6. 18.35. 5	13. 8.33,9	7.17.27	13.21,9	14,4	
12	M.	6. 19.34.35	13.12.16,0	7.40. 2	13.36,3	13,9	
13	Tu.	6. 20.34. 7	13.15.58,7	8. 2.30	13.50,2	13,3	
14	W.	6. 21.33.41	13.19.41,7	8.24.52	14. 3,5	12,8	
15	Th.	6. 22.33.18	13.23.25,5	8.47. 7	14.16,8	12,2	
16	F.	6. 23.32.57	13.27. 9,9	9. 9.15	14.28,5	11,6	
17	Sa.	6. 24.32.38	13.30.54,8	9.31.15	14.40,1	11,0	
18	Su.	6. 25.32.21	13.34.40,3	9.53. 6	14.51,1	10,4	
19	M.	6. 26.32. 6	13.38.26,4	10.14.49	15. 1,5	9,7	
20	Tu.	6. 27.31.53	13.42.13,4	10.36.22	15.11,2	9,1	
21	W.	6. 28.31.42	13.46. 0,6	10.57.46	15.20,3	8,3	
22	Th.	6. 29.31.34	13.49.48,8	11.19. 1	15.28,6	7,7	
23	F.	7. 0.31.27	13.53.37,7	11.40. 5	15.36,3	7,0	
24	Sa.	7. 1.31.22	13.57.27,2	12. 0.58	15.43,3	6,3	
25	Su.	7. 2.31.18	14. 1.17,4	12.21.40	15.49,6	5,7	
26	M.	7. 3.31.16	14. 5. 8,3	12.42.10	15.55,3	5,0	
27	Tu.	7. 4.31.15	14. 8.59,9	13. 2.29	16. 0,3	4,2	
28	W.	7. 5.31.16	14.12.52,2	13.22.36	16. 4,5	3,4	
29	Th.	7. 6.31.19	14.16.45,3	13.42.29	16. 7,9	2,7	
30	F.	7. 7.31.23	14.20.39,2	14. 2. 9	16.10,6	2,0	
31	Sa.	7. 8.31.29	14.24.33,8	14.21.35	16.12,6		

III. OCTOBER 1789. [III]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 2,9	1. 4,3	2. 27,8	9.999948	7. 21. 29
7	16. 4,5	1. 4,6	2. 28,4	9.999197	7. 21. 10
13	16. 6,1	1. 5,0	2. 28,9	9.998468	7. 20. 51
19	16. 7,8	1. 5,6	2. 29,3	9.997745	7. 20. 31
25	16. 9,5	1. 6,2	2. 29,8	9.997021	7. 20. 12

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Immersions.		II. Satellite. Immersions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	9. 25. 27	1	12. 17. 12	1	12. 46. 7 I
4	3. 54. 30	5	1. 34. 46	*1	16. 19. 37 E
5	22. 23. 26	*8	14. 52. 19	*8	16. 46. 34 I
*7	16. 52. 25	12	4. 9. 46	8	20. 19. 57 E
9	11. 21. 18	*15	17. 27. 6	15	20. 46. 33 I
11	5. 50. 12	19	6. 44. 17	16	0. 19. 45 E
13	0. 19. 3	22	20. 1. 20	23	0. 45. 57 I
14	18. 47. 52	26	9. 18. 15	23	4. 18. 57 E
16	13. 16. 40	29	22. 35. 1	30	4. 44. 43 I
18	7. 45. 26			30	8. 17. 30 E
20	2. 14. 9			IV. Satellite.	
21	20. 42. 50			9	14. 16. 26 I
*23	15. 11. 27			9	19. 2. 7 E
25	9. 40. 6			26	8. 17. 22 I
27	4. 8. 39			26	13. 3. 15 E
28	22. 37. 11				
*30	17. 5. 40				

[112] OCTOBER 1789. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Gr. Elong. 13^d.

1	8. 25. 0	4. 26 S	7. 0. 47	1. 43 S	13. 22 S	1. 20
4	9. 3. 25	5. 11	7. 4. 44	2. 3	15. 3	1. 24
7	9. 12. 3	5. 50	7. 8. 29	2. 22	16. 35	1. 27
10	9. 21. 2	6. 22	7. 11. 59	2. 38	17. 58	1. 30
13	10. 0. 28	6. 45	7. 15. 11	2. 52	19. 9	1. 31
16	10. 10. 29	6. 58	7. 17. 59	3. 1	20. 7	1. 31
19	10. 21. 13	6. 58	7. 20. 16	3. 6	20. 49	1. 29
22	11. 2. 50	6. 42	7. 21. 49	3. 3	21. 11	1. 24
25	11. 15. 29	6. 5	7. 22. 25	2. 50	21. 8	1. 15
28	11. 29. 22	5. 5	7. 21. 48	2. 25	20. 34	1. 2
31	0. 14. 33	3. 39	7. 19. 47	1. 45	19. 23	0. 43

V E N U S.

1	8. 28. 43	0. 49 S	7. 11. 9	0. 27 S	15. 37 S	2. 2
7	9. 8. 12	1. 21	7. 18. 26	0. 45	18. 4	2. 9
13	9. 17. 41	1. 51	7. 25. 42	1. 4	20. 14	2. 16
19	9. 27. 10	2. 17	8. 2. 56	1. 21	22. 6	2. 24
25	10. 6. 39	2. 40	8. 10. 10	1. 38	23. 37	2. 32

M A R S.

1	2. 21. 17	1. 1 N	3. 28. 27	1. 0 N	21. 29 N	19. 30
7	2. 24. 16	1. 6	4. 1. 49	1. 7	20. 52	19. 22
13	2. 27. 13	1. 10	4. 5. 4	1. 14	20. 13	19. 13
19	3. 0. 9	1. 14	4. 8. 14	1. 21	19. 32	19. 4
25	3. 3. 3	1. 19	4. 11. 17	1. 29	18. 50	18. 54

J U P I T E R.

1	4. 15. 42	0. 47 N	4. 23. 22	0. 42 N	14. 25 N	21. 9
7	4. 16. 10	0. 48	4. 24. 26	0. 43	14. 4	20. 51
13	4. 16. 38	0. 48	4. 25. 27	0. 44	13. 45	20. 33
19	4. 17. 7	0. 49	4. 26. 24	0. 45	13. 26	20. 14
25	4. 17. 35	0. 50	4. 27. 18	0. 47	13. 9	19. 55

S A T U R N.

1	11. 20. 33	2. 8 S	11. 18. 29	2. 22 S	6. 45 S	10. 48
7	11. 20. 44	2. 9	11. 18. 5	2. 22	6. 54	10. 24
13	11. 20. 56	2. 9	11. 17. 43	2. 22	7. 2	10. 1
19	11. 21. 8	2. 9	11. 17. 23	2. 21	7. 9	9. 37
25	11. 21. 20	2. 10	11. 17. 6	2. 20	7. 15	9. 13

V. OCTOBER 1789. [113]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Th.	11. 8. 14. 4	11. 14. 9. 48	4. 53. 37 N	4. 42. 9 N
2	F.	11. 20. 5. 37	11. 26. 1. 45	4. 27. 40	4. 10. 14
3	Sa.	0. 1. 58. 27	0. 7. 55. 53	3. 50. 4	3. 27. 17
4	Su.	0. 13. 54. 16	0. 19. 53. 48	3. 2. 8	2. 34. 53
5	M.	0. 25. 54. 40	1. 1. 57. 7	2. 5. 47	1. 35. 3
6	Tu.	1. 8. 1. 21	1. 14. 7. 37	1. 3. 6 N	0. 30. 10 N
7	W.	1. 20. 16. 12	1. 26. 27. 24	0. 3. 20 S	0. 37. 5 S
8	Th.	2. 2. 41. 32	2. 8. 58. 58	1. 10. 41	1. 43. 44
9	F.	2. 15. 20. 6	2. 21. 45. 15	2. 15. 50	2. 46. 36
10	Sa.	2. 28. 14. 53	3. 4. 49. 17	3. 15. 34	3. 42. 20
11	Su.	3. 11. 28. 50	3. 18. 13. 48	4. 6. 28	4. 27. 31
12	M.	3. 25. 4. 24	4. 2. 0. 47	4. 45. 6	4. 58. 45
13	Tu.	4. 9. 2. 56	4. 16. 10. 45	5. 8. 8	5. 12. 56
14	W.	4. 23. 24. 0	5. 0. 42. 14	5. 12. 50	5. 7. 45
15	Th.	5. 8. 4. 52	5. 15. 31. 9	4. 57. 31	4. 42. 14
16	F.	5. 23. 0. 11	6. 0. 30. 57	4. 22. 2	3. 57. 13
17	Sa.	6. 8. 2. 20	6. 15. 33. 10	3. 28. 14	2. 55. 42
18	Su.	6. 23. 2. 18	7. 0. 28. 37	2. 20. 12	1. 42. 31
19	M.	7. 7. 51. 8	7. 15. 8. 54	1. 3. 23 S	0. 23. 33 S
20	Tu.	7. 22. 21. 15	7. 29. 27. 37	0. 16. 12 N	0. 55. 8 N
21	W.	8. 6. 27. 35	8. 13. 20. 59	1. 32. 40	2. 8. 17
22	Th.	8. 20. 7. 45	8. 26. 47. 56	2. 41. 30	3. 11. 59
23	F.	9. 3. 21. 50	9. 9. 49. 43	3. 39. 27	4. 3. 39
24	Sa.	9. 16. 12. 1	9. 22. 29. 11	4. 24. 28	4. 41. 49
25	Su.	9. 28. 41. 45	10. 4. 50. 13	4. 55. 37	5. 5. 53
26	M.	10. 10. 55. 13	10. 16. 57. 13	5. 12. 35	5. 15. 48
27	Tu.	10. 22. 56. 54	10. 28. 54. 43	5. 15. 32	5. 11. 52
28	W.	11. 4. 51. 16	11. 10. 47. 1	5. 4. 52	4. 54. 37
29	Th.	11. 16. 42. 29	11. 22. 38. 6	4. 41. 13	4. 24. 48
30	F.	11. 28. 34. 17	0. 4. 31. 26	4. 5. 31	3. 43. 31
31	Sa.	0. 10. 29. 54	0. 16. 29. 58	3. 18. 59	2. 52. 9

[114]		OCTOBER 1789.					VI.
Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascens. at Noon.	D's Right Ascens. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Th.	14	10. 19	338. 3	343. 36	3. 57 S	1. 54 S
2	F.	15	11. 0	349. 9	354. 42	0. 10 N	2. 15 N
3	Sa.	16	11. 42	0. 17	5. 55	4. 18	6. 19
4	Su.	17	12. 26	11. 37	17. 23	8. 17	10. 11
5	M.	18	13. 11	23. 15	29. 13	11. 59	13. 39
6	Tu.	19	13. 58	35. 18	41. 30	15. 41	16. 34
7	W.	20	14. 47	47. 50	54. 18	17. 47	18. 47
8	Th.	21	15. 38	60. 52	67. 33	19. 34	20. 7
9	F.	22	16. 31	74. 20	81. 12	20. 25	20. 27
10	Sa.	23	17. 25	88. 8	95. 7	20. 12	19. 41
11	Su.	24	18. 20	102. 7	109. 7	18. 53	17. 48
12	M.	25	19. 14	116. 7	123. 7	16. 28	14. 52
13	Tu.	26	20. 8	130. 6	137. 4	13. 3	11. 1
14	W.	27	21. 2	144. 9	150. 56	8. 48	6. 26
15	Th.	28	21. 56	157. 53	164. 51	3. 57 N	1. 23 N
16	F.	29	22. 50	171. 51	178. 54	1. 14 S	3. 50 S
17	Sa.	30	23. 46	186. 0	193. 11	6. 23	8. 50
18	Su.	1	0	200. 26	207. 45	11. 8	13. 15
19	M.	2	0. 44	215. 8	222. 34	15. 8	16. 46
20	Tu.	3	1. 42	230. 1	237. 28	18. 7	19. 9
21	W.	4	2. 39	244. 53	252. 13	19. 53	20. 18
22	Th.	5	3. 35	259. 28	266. 36	20. 25	20. 14
23	F.	6	4. 29	273. 34	280. 23	19. 46	19. 3
24	Sa.	7	5. 20	287. 1	293. 29	18. 6	16. 57
25	Su.	8	6. 8	299. 47	305. 55	15. 37	14. 8
26	M.	9	6. 54	311. 55	317. 47	12. 30	10. 45
27	Tu.	10	7. 38	323. 33	329. 14	8. 54	6. 59
28	W.	11	8. 20	334. 50	340. 24	5. 0	2. 59 S
29	Th.	12	9. 2	345. 57	351. 30	0. 56 S	1. 8 N
30	F.	13	9. 44	357. 4	2. 40	3. 11 N	5. 13
31	Sa.	14	10. 27	8. 20	14. 5	7. 12	9. 8

VII. OCTOBER 1789. [115]							
Days of the Month.	Days of the Week.	Semidr. D at Noon.	Semidr. D at Midnight.	Hor. Par. D at Noon.	Hor. Par. D at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Th.	14. 45	14. 44	54. 7	54. 6	5219	5221
2	F.	14. 44	14. 45	54. 6	54. 9	5221	5217
3	Sa.	14. 46	14. 48	54. 12	54. 17	5213	5206
4	Su.	14. 49	14. 51	54. 24	54. 31	5197	5187
5	M.	14. 54	14. 56	54. 40	54. 49	5175	5163
6	Tu.	14. 59	15. 2	55. 0	55. 12	5149	5133
7	W.	15. 6	15. 10	55. 25	55. 39	5116	5098
8	Th.	15. 14	15. 18	55. 54	56. 11	5079	5056
9	F.	15. 23	15. 28	56. 29	56. 48	5033	5009
10	Sa.	15. 34	15. 40	57. 8	57. 29	4984	4957
11	Su.	15. 46	15. 52	57. 51	58. 13	4930	4902
12	M.	15. 58	16. 4	58. 36	58. 59	4874	4845
13	Tu.	16. 10	16. 16	59. 21	59. 43	4819	4792
14	W.	16. 22	16. 29	60. 2	60. 21	4769	4746
15	Th.	16. 31	16. 34	60. 37	60. 49	4727	4712
16	F.	16. 37	16. 38	60. 58	61. 4	4702	4694
17	Sa.	16. 39	16. 38	61. 5	61. 2	4693	4697
18	Su.	16. 36	16. 32	60. 54	60. 42	4707	4721
19	M.	16. 28	16. 23	60. 26	60. 6	4740	4764
20	Tu.	16. 17	16. 10	59. 44	59. 19	4790	4821
21	W.	16. 2	15. 55	58. 54	58. 24	4854	4886
22	Th.	15. 47	15. 40	57. 56	57. 28	4923	4958
23	F.	15. 32	15. 25	57. 1	56. 35	4992	5026
24	Sa.	15. 19	15. 13	56. 11	55. 49	5056	5085
25	Su.	15. 7	15. 2	55. 28	55. 10	5112	5136
26	M.	14. 58	14. 55	54. 55	54. 43	5155	5171
27	Tu.	14. 52	14. 49	54. 33	54. 24	5185	5197
28	W.	14. 48	14. 47	54. 18	54. 15	5205	5209
29	Th.	14. 47	14. 47	54. 14	54. 15	5210	5209
30	F.	14. 48	14. 49	54. 17	54. 22	5206	5199
31	Sa.	14. 51	14. 53	54. 29	54. 37	5190	5179

Distances of β 's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1	α Arietis.	56.	11.29	54.	44.18	53.	17.9	51.	50.3	50.	23.0	48.	56.0	47.	29.4	46.	2.12
2		44.	35.23	43.	8.37	41.	41.57	40.	15.23	38.	48.54	37.	22.32	35.	56.18	34.	30.12
3		33.	4.14														
3	Aldebaran.	65.	28.14	63.	59.15	62.	30.12	61.	1.4	59.	31.53	58.	2.38	56.	33.18	55.	3.54
4		53.	34.25	52.	4.51	50.	35.13	49.	5.30	47.	35.43	46.	5.51	44.	35.54	43.	5.51
5		41.	35.44	40.	5.31	38.	35.13	37.	4.50	35.	34.23	34.	3.51	32.	33.14	31.	2.35
6		29.	31.51	28.	1.5	26.	30.16	24.	59.25	23.	28.32						
6	Pollux.									66.	18.28	64.	48.17	63.	18.2	61.	47.40
7		60.	17.13	58.	46.40	57.	16.3	55.	45.20	54.	14.34	52.	43.43	51.	12.50	49.	41.53
8		48.	10.54	46.	39.51	45.	8.48	43.	37.45	42.	6.43	40.	35.43	39.	4.48	37.	33.57
9	Regulus.	36.	3.11														
9		71.	36.37	70.	1.2	68.	25.11	66.	49.7	65.	12.47	63.	36.13	61.	59.24	60.	22.20
10		58.	45.2	57.	7.29	55.	29.40	53.	51.36	52.	13.17	50.	34.42	48.	55.51	47.	16.44
11	The Sun.	45.	37.22	43.	57.44	42.	17.52	40.	37.44	38.	57.21						
9		121.	14.29	119.	45.57	118.	17.9	116.	48.5	115.	18.46	113.	49.11	112.	19.19	110.	49.12
10		109.	18.48	107.	48.8	106.	17.10	104.	45.55	103.	14.23	101.	42.32	100.	10.23	98.	37.55
11		97.	5.9	95.	32.4	93.	58.40	92.	24.56	90.	50.53	89.	16.30	87.	41.46	86.	6.43
12		84.	31.19	82.	55.35	81.	19.30	79.	43.5	78.	6.19	76.	29.12	74.	51.45	73.	13.57
13		71.	35.48	69.	57.18	68.	18.29	66.	39.19	64.	59.49	63.	19.58	61.	39.49	59.	59.19

IX. OCTOBER 1789. [117]

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
14	The Sun.	58. 18. 31	56. 37. 24	54. 55. 58	53. 14. 16	51. 32. 15	49. 49. 57	48. 7. 24	46. 24. 35
15		44. 41. 31	42. 58. 12	41. 14. 41	39. 30. 57				
19	α Aquilæ.	69. 28. 26	67. 51. 56	66. 16. 4	64. 40. 53	75. 59. 53	74. 21. 15	72. 43. 8	71. 5. 31
20		56. 55. 49				63. 6. 20	61. 32. 31	59. 59. 29	58. 27. 16
21									
21	Fomalhaut.	85. 22. 46	83. 49. 19	82. 16. 19	80. 43. 48	79. 11. 45	77. 40. 12	76. 9. 12	74. 38. 45
22		73. 8. 50	71. 39. 30	70. 10. 47	68. 42. 40	67. 15. 11			
22						83. 3. 52	81. 28. 5	79. 52. 45	78. 17. 50
23	α Pegasi.	76. 43. 22	75. 9. 19	73. 35. 43	72. 2. 32	70. 29. 47	68. 57. 27	67. 25. 34	65. 54. 6
24		64. 23. 3	62. 52. 26	61. 22. 15	59. 52. 30	58. 23. 10	56. 54. 16	55. 25. 48	53. 57. 47
25		52. 30. 13	51. 3. 5	49. 36. 26	48. 10. 16	46. 44. 34	45. 19. 22	43. 54. 42	42. 30. 33
26		41. 6. 55							
26		83. 1. 36	81. 32. 16	80. 3. 6	78. 34. 6	77. 5. 16	75. 36. 36	74. 8. 4	72. 39. 41
27	α Arietis.	71. 11. 27	69. 43. 21	68. 15. 22	66. 47. 29	65. 19. 44	63. 52. 4	62. 24. 30	60. 57. 1
28		59. 29. 37	58. 2. 18	56. 35. 4	55. 7. 54	53. 40. 48	52. 13. 46	50. 46. 48	49. 19. 52
29		47. 53. 0							
29		80. 41. 9	79. 12. 40	77. 44. 10	76. 15. 40	74. 47. 8	73. 18. 30	71. 49. 50	70. 21. 6
30	Aldebaran.	68. 52. 19	67. 23. 26	65. 54. 29	64. 25. 26	62. 56. 18	61. 27. 4	59. 57. 44	58. 28. 18
31		56. 58. 46	55. 29. 7	53. 59. 22	52. 29. 29	50. 59. 30	49. 29. 23	47. 59. 8	46. 28. 46
NI		44. 58. 15							

Distances of γ 's Center from Sun, and from Stars west of her.																	
Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1	Antares.	91.	46. 55	93.	15. 5	94.	43. 16	96.	11. 27	97.	39. 38	99.	7. 50	100.	36. 4	102.	4. 19
2		103.	32. 36														
2	α Aquilæ.	54.	25. 12	55.	41. 52	56.	58. 55	58.	16. 22	59.	34. 13	60.	52. 25	62.	10. 57	63.	29. 49
3		64.	49. 0	66.	8. 28	67.	28. 11	68.	48. 11	70.	8. 26	71.	28. 55	72.	49. 36	74.	10. 31
4		75.	31. 38	76.	52. 57	78.	14. 26	79.	36. 6	80.	57. 57	82.	19. 57	83.	42. 5	85.	4. 22
5	α Pegasi.	86.	26. 46														
5		38.	38. 56	40.	1. 51	41.	25. 16	42.	49. 13	44.	13. 38	45.	38. 32	47.	3. 51	48.	29. 35
6		49.	55. 43	51.	22. 11	52.	49. 0	54.	16. 8	55.	43. 37	57.	11. 24	58.	39. 28	60.	7. 49
7	α Arietis.	61.	36. 27														
7		18.	25. 8	19.	48. 9	21.	12. 20	22.	37. 40	24.	4. 8	25.	31. 35	26.	59. 49	28.	28. 51
8		29.	58. 38	31.	28. 54	32.	59. 40	34.	30. 59	36.	2. 48	37.	35. 1	39.	7. 39	40.	10. 42
9		42.	14. 9	43.	47. 57	45.	22. 7	46.	56. 39	48.	31. 33	50.	6. 48	51.	42. 24	53.	18. 20
10		54.	54. 36														
10	Aldebaran.	21.	26. 22	23.	3. 0	24.	40. 4	26.	17. 34	27.	55. 31	29.	33. 52	31.	12. 38	32.	51. 47
11		34.	31. 20	36.	11. 14	37.	51. 31	39.	32. 10	41.	13. 11	42.	54. 33	44.	36. 18	46.	18. 24
12		48.	0. 52	49.	43. 42	51.	26. 54	53.	10. 26	54.	54. 22	56.	38. 39	58.	23. 17	60.	8. 16
13	Pollux.	61.	53. 37														
13		22.	6. 15	23.	38. 18	25.	12. 8	26.	47. 36	28.	24. 35	30.	3. 1	31.	42. 35	33.	23. 17
14		35.	5. 6	36.	47. 37	38.	30. 52	40.	14. 52	41.	59. 36	43.	44. 52	45.	30. 41	47.	17. 0
15		49.	3. 52	50.	51. 10	52.	38. 49	54.	26. 50	56.	15. 12						

XI. OCTOBER 1789. [119]

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
15	Regulus.	26. 30. 42	28. 20. 29	30. 10. 40	32. 1. 13	19. 17. 33	21. 4. 50	22. 52. 49	24. 41. 27
16		41. 17. 32				33. 52. 9	35. 43. 20	37. 34. 57	39. 26. 1
17									
21	The Sun.	37. 57. 29	39. 34. 12	41. 10. 29	42. 46. 22	44. 21. 48	45. 56. 49	47. 31. 24	49. 5. 34
22		50. 39. 18	52. 12. 35	53. 45. 28	55. 17. 54	56. 49. 56	58. 21. 33	59. 52. 46	61. 23. 34
23		62. 53. 58	64. 23. 58	65. 53. 35	67. 22. 49	68. 51. 40	70. 20. 9	71. 48. 16	73. 16. 1
24		74. 43. 26	76. 10. 30	77. 37. 15	79. 3. 41	80. 29. 47	81. 55. 36	83. 21. 7	84. 46. 21
25		86. 11. 18	87. 35. 59	89. 0. 24	90. 24. 35	91. 48. 30	93. 12. 13	94. 35. 43	95. 59. 1
26		97. 22. 6	98. 44. 59	100. 7. 42	101. 30. 15	102. 52. 38	104. 14. 53	105. 36. 59	106. 58. 59
27		108. 20. 50	109. 42. 34	111. 4. 12	112. 25. 45	113. 47. 12	115. 8. 35	116. 29. 57	117. 51. 11
28		119. 12. 24							
25	Antares.	52. 39. 53	54. 11. 14	55. 42. 23	57. 13. 18	58. 44. 1	60. 14. 32	61. 44. 52	63. 15. 0
26		64. 44. 57	66. 14. 43	67. 44. 20	69. 13. 47	70. 43. 5	72. 12. 15	73. 41. 19	75. 10. 14
27		76. 39. 3	78. 7. 45	79. 36. 22	81. 14. 53	82. 38. 19	84. 1. 41	85. 30. 0	86. 58. 15
28		88. 26. 28	89. 54. 38	91. 22. 47	92. 50. 54	94. 19. 0			
28	α Aquilæ					46. 32. 36	47. 45. 54	48. 59. 48	50. 14. 16
29		51. 29. 20	52. 44. 55	54. 1. 0	55. 17. 32	56. 34. 33	57. 51. 58	59. 9. 45	60. 27. 57
30		61. 46. 31	63. 5. 24	64. 24. 36	65. 44. 6	67. 3. 56	68. 24. 13	69. 44. 25	71. 5. 4
31		72. 25. 59	73. 47. 9	75. 8. 33	76. 30. 11	77. 52. 3	79. 14. 8	80. 36. 25	81. 58. 53
Ni		83. 21. 34							

[120]

OCTOBER 1789.

XII.

Configurations of the SATELLITES of JUPITER at
at Five o' Clock in the Morning.

1	1 ●	4	⊙	2	3	
2	3 ● 4 ●		2. ⊙	1		
3		3. 2	1. ⊙		4	
4		3	⊙	1 2		4
5		3 1	⊙	2		4
6		2	⊙	3		4
7			1 2 ⊙		3	4
8	1 ●		⊙	2	3	4
9	2 ● 3 ●		⊙	1	4	
10	4 ●	3. 2	1. ⊙			
11		3. 4	⊙	2 1		
12		4. 3	1. ⊙	2		
13	4		2. ⊙	3	1	
14	4		1 2 ⊙		3	
15	4		⊙	3	2	3
16	4		⊙	2	3	1.0
17	4	2 3	1. ⊙			
18	4	4	⊙	2 1		
19		3	1. ⊙	4	2	
20	3.0		2. ⊙	1	4	
21			2.1 ⊙		3	4
22			⊙	1	2	3
23			1. ⊙	2	3	4
24	1 ●		2. 3. ⊙			4
25	2.0	3	⊙	1		4
26		3	1. ⊙		2	4
27			2. 3 ⊙	4	1	
28		4. 2 1	⊙		3	
29	4		⊙	1	2	3
30	4		1. ⊙	2	3	
31	4		2. 3. ⊙	1		

I. NOVEMBER 1789. [121]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			Full Moon — 2. 12. 22
			Last Quarter — 9. 22. 30
			New Moon — 16. 15. 29
			First Quarter — 24. 3. 42
			Other Phenomena.
			D. H. M.
1	Su.	21 st Su. aft. Tr. All Saints.	2. ☾ eclipsed, vis.
2	M.	Pr. Edward born.	4. 11. 17 ☾ ☽ 8
3	Tu.	Prs. Soph. b. On mor. of	5. 2. 56 ☾ ☽ 8
4	W.	[All Souls, 1 ret.	1. 10 Ing. of ☽'s cent.
5	Th.	Powder-Plot, 1605.	on ☉'s disk,
6	F.	Leon ^d . M. Ter. begins.	☽'s Lat. 9° 1/2' S.
7	Sa.	D. of Cumberland born.	6. 4. Egr. ☽'s Lat.
			5° 1/2' S.
8	Su.	22 ^d Sunday after Trinity.	17. 45 ☾ ☽ 8
9	M.	[Prs. Aug. Sophia born.	6. 15. 46 ☾ ☽ 11
10	Tu.		9. 8. 8 ☾ ☽ 1 ad ☽ ☽
11	W.	St. Martin.	9. 4 ☾ ☽ 2 ad ☽ ☽
12	Th.	On mor. of St. M. 2 ret.	11. 46 1/2 Im. of ☽ ☽ * 12' 1/2
13	F.	Britius. [Camb. T. div. m.	N. of ☾'s cent.
14	Sa.		12. 23 1/2 Em. * 12' N.
15	Su.	23 ^d Sunday after Trinity.	12. 5. 56 ☾ ☽ 9
16	M.	[Machutus.	13. ☽ ☽ 7 diff. Lat.
17	Tu.	Hugh Bp. of Lincoln.	13'.
18	W.	In 8 days of S. M. 3 ret.	14. ☽ Stationary.
19	Th.		6. 29 ☾ ☽ 11
20	F.	Edmund K. and Mart.	16. ☉ eclips. Invis.
21	Sa.		19. ☽ Stationary.
22	Su.	24 th Su. aft. Tr. Cecilia.	4. 31 1/2 Im. of ☽ ad ☽ ☽
23	M.	St. Clement.	* 14' S. of ☾'s
24	Tu.		cent.
25	W.	D. of Gl. b. Cath. In 15	4. 54 1/2 Em. * 15' 1/2 S.
26	Th.	[days of S. Mart. 4 ret.	21. 7. 37 ☉ enters ☽
27	F.		13. 16 ☾ ☽ 13
28	Sa.		27. 9. 8 ☾ ☽ 8
29	Sa.	Advent Sunday.	
30	M.	St. Andrew. Mich. Term	
		[ends.	

[122]

NOVEMBER 1789.

11.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time, Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Su.	7. 9.31.36	14.28.29,2	14.40.48	16.13,7	0,3
2	M.	7. 10.31.46	14.32.25,4	14.59.47	16.14,0	0,5
3	Tu.	7. 11.31.57	14.36.22,5	15.18.31	16.13,5	1,3
4	W.	7. 12.32.10	14.40.20,4	15.36.59	16.12,2	2,1
5	Th.	7. 13.32.25	14.44.19,1	15.55.12	16.10,1	3,0
6	F.	7. 14.32.42	14.48.18,6	16.13. 9	16. 7,1	3,8
7	Sa.	7. 15.33. 0	14.52.18,9	16.30.50	16. 3,3	4,7
8	Su.	7. 16.33.20	14.56.20,1	16.48.15	15.58,6	5,5
9	M.	7. 17.33.43	15. 0.22,3	17. 5.22	15.53,1	6,4
10	Tu.	7. 18.34. 9	15. 4.25,3	17.22.12	15.46,7	7,3
11	W.	7. 19.34.36	15. 8.29,2	17.38.44	15.39,4	8,2
12	Th.	7. 20.35. 5	15.12.34,0	17.54.58	15.31,2	9,1
13	F.	7. 21.35.36	15.16.39,6	18.10.53	15.22,1	9,9
14	Sa.	7. 22.36. 9	15.20.46,1	18.26.29	15.12,2	10,8
15	Su.	7. 23.36.44	15.24.53,5	18.41.46	15. 1,4	11,6
16	M.	7. 24.37.20	15.29. 1,7	18.56.43	14.49,8	12,5
17	Tu.	7. 25.37.58	15.33.10,7	19.11.19	14.37,3	13,3
18	W.	7. 26.38.37	15.37.20,6	19.25.34	14.24,0	14,1
19	Th.	7. 27.39.18	15.41.31,3	19.39.28	14. 9,9	14,9
20	F.	7. 28.40. 1	15.45.42,9	19.53. 1	13.55,0	15,7
21	Sa.	7. 29.40.44	15.49.55,1	20. 6.12	13.39,3	16,5
22	Su.	8. 0.41.29	15.54. 8,2	20.19. 1	13.22,8	17,3
23	M.	8. 1.42.14	15.58.22,1	20.31.27	13. 5,5	18,0
24	Tu.	8. 2.43. 1	16. 2.36,5	20.43.31	12.47,5	18,7
25	W.	8. 3.43.49	16. 6.52,0	20.55.11	12.28,8	19,4
26	Th.	8. 4.44.37	16.11. 8,0	21. 6.27	12. 9,4	20,1
27	F.	8. 5.45.26	16.15.24,7	21.17.19	11.49,3	20,8
28	Sa.	8. 6.46.17	16.19.42,1	21.27.47	11.28,5	21,5
29	Su.	8. 7.47. 8	16.24. 0,2	21.37.51	11. 7,0	22,1
30	M.	8. 8.48. 0	16.28.19,0	21.47.31	10.44,9	

III. NOVEMBER 1789. [123]

Days of the Month.	Semidiameter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 11. 1	1. 6. 9	2. 30. 4	9. 996209	7. 19. 50
7	16. 12. 6	1. 7. 6	2. 30. 8	9. 995579	7. 19. 31
13	16. 13. 9	1. 8. 3	2. 31. 3	9. 995009	7. 19. 12
19	16. 15. 1	1. 9. 0	2. 31. 7	9. 994474	7. 18. 53
25	16. 16. 2	1. 9. 7	2. 32. 0	9. 993978	7. 18. 34

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Immersions.		II. Satellite. Immersions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	11. 34. 6	2	11. 51. 38	6	8. 42. 45 I
3	6. 2. 31	6	1. 8. 6	6	12. 15. 17 E
5	0. 30. 52	*9	14. 24. 23	*13	12. 39. 59 I
6	18. 59. 10	13	3. 40. 29	*13	16. 12. 16 E
*8	13. 27. 25	*16	16. 56. 26	*20	16. 36. 27 I
10	7. 55. 37	20	6. 12. 14	20	20. 8. 29 E
12	2. 23. 47	23	19. 27. 53	27	20. 32. 12 I
13	20. 51. 53	27	8. 43. 24	28	0. 3. 59 E
*15	15. 19. 57	30	21. 58. 49	IV. Satellite.	
17	9. 47. 58			12	2. 14. 1 I
19	4. 15. 57			12	6. 59. 56 E
20	22. 43. 52			28	20. 6. 44 I
*22	17. 11. 44			29	0. 52. 26 E
24	11. 39. 36				
26	6. 7. 25				
28	0. 35. 10				
29	19. 2. 54				

[124] NOVEMBER 1789. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

Inf. $5^{\circ} 32^{\prime}$. MERCURY. Greatest El. 22° .

1	0. 19. 55	3. 4 S	7. 18. 48	1. 29 S	18. 51 S	0. 35
4	1. 6. 54	1. 6 S	7. 15. 12	0. 31 S	16. 54	0. 10
7	1. 25. 1	1. 7 N	7. 11. 17	0. 30 N	14. 45	23. 36
10	2. 13. 49	3. 18	7. 8. 8	1. 24	12. 55	23. 15
13	3. 2. 43	5. 7	7. 6. 33	2. 2	11. 48	22. 59
16	3. 21. 2	6. 22	7. 6. 39	2. 22	11. 31	22. 49
19	4. 8. 17	6. 56	7. 8. 13	2. 28	11. 56	22. 44
22	4. 24. 9	6. 56	7. 10. 53	2. 22	12. 51	22. 43
25	5. 8. 34	6. 28	7. 14. 21	2. 10	14. 6	22. 44
28	5. 21. 40	5. 41	7. 18. 5	1. 53	15. 25	22. 46
30	5. 29. 44	5. 3	7. 20. 50	1. 49	16. 22	22. 48

VENUS.

1	10. 17. 43	3. 1 S	8. 18. 34	1. 55 S	24. 53 S	2. 41
7	10. 27. 12	3. 14	8. 25. 44	2. 8	25. 32	2. 49
13	11. 6. 42	3. 21	9. 2. 52	2. 18	25. 44	2. 56
19	11. 16. 13	3. 23	9. 9. 58	2. 24	25. 30	3. 3
25	11. 25. 45	3. 20	9. 17. 1	2. 28	24. 50	3. 8

MARS. $\square 10^{\circ} 74^{\prime}$.

1	3. 6. 24	1. 23 N	4. 14. 41	1. 38 N	18. 1 N	18. 41
7	3. 9. 15	1. 27	4. 17. 27	1. 47	17. 19	18. 28
13	3. 12. 5	1. 30	4. 20. 3	1. 56	16. 39	18. 14
19	3. 14. 53	1. 33	4. 22. 29	2. 6	16. 1	17. 59
25	3. 17. 40	1. 36	4. 24. 42	2. 16	15. 27	17. 42

JUPITER. $\square 21^{\circ} 16\frac{1}{2}^{\prime}$.

1	4. 18. 8	0. 50 N	4. 28. 15	0. 48 N	12. 51 N	19. 32
7	4. 18. 36	0. 51	4. 28. 59	0. 49	12. 37	19. 11
13	4. 19. 4	0. 51	4. 29. 37	0. 51	12. 24	18. 49
19	4. 19. 33	0. 52	5. 0. 10	0. 52	12. 14	18. 26
25	4. 20. 1	0. 52	5. 0. 37	0. 54	12. 6	18. 2

SATURN.

1	11. 21. 34	2. 10 S	11. 16. 51	2. 19 S	7. 20 S	8. 45
7	11. 21. 46	2. 10	11. 16. 42	2. 18	7. 22	8. 21
13	11. 21. 58	2. 10	11. 16. 36	2. 17	7. 24	7. 56
19	11. 22. 10	2. 11	11. 16. 34	2. 16	7. 24	7. 31
25	11. 22. 22	2. 11	11. 16. 36	2. 15	7. 21	7. 6

V. NOVEMBER 1789. [125]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Su.	0. 22. 31. 57	0. 28. 36. 0	2. 23. 14 N	1. 52. 32 N
2	M.	1. 4. 42. 25	1. 10. 51. 18	1. 20. 17	0. 46. 54 N
3	Tu.	1. 17. 2. 49	1. 23. 17. 11	0. 12. 43 N	0. 21. 53 S
4	W.	1. 29. 34. 25	2. 5. 54. 41	0. 56. 29 S	1. 30. 43
5	Th.	2. 12. 18. 3	2. 18. 44. 41	2. 4. 4	2. 36. 7
6	F.	2. 25. 14. 35	3. 1. 47. 59	3. 6. 26	3. 34. 34
7	Sa.	3. 8. 24. 52	3. 15. 5. 22	4. 0. 5	4. 22. 36
8	Su.	3. 21. 49. 29	3. 28. 37. 21	4. 41. 41	4. 57. 2
9	M.	4. 5. 28. 59	4. 12. 24. 16	5. 8. 18	5. 15. 11
10	Tu.	4. 19. 23. 15	4. 26. 25. 47	5. 17. 31	5. 15. 8
11	W.	5. 3. 31. 40	5. 10. 40. 42	5. 7. 57	4. 55. 57
12	Th.	5. 17. 52. 30	5. 25. 6. 42	4. 39. 14	4. 18. 0
13	F.	6. 2. 22. 45	6. 9. 40. 9	3. 52. 32	3. 23. 12
14	Sa.	6. 16. 58. 11	6. 24. 16. 12	2. 50. 32	2. 15. 3
15	Su.	7. 1. 33. 24	7. 8. 49. 4	1. 37. 25	0. 58. 22 S
16	M.	7. 16. 2. 23	7. 23. 12. 38	0. 18. 33 S	0. 21. 15 N
17	Tu.	8. 0. 19. 6	8. 7. 21. 20	1. 0. 23 N	1. 38. 11
18	W.	8. 14. 18. 42	8. 21. 10. 52	2. 14. 3	2. 47. 31
19	Th.	8. 27. 57. 32	9. 4. 38. 35	3. 18. 9	3. 45. 36
20	F.	9. 11. 13. 57	9. 17. 43. 46	4. 9. 38	4. 30. 5
21	Sa.	9. 24. 8. 12	10. 0. 27. 30	4. 46. 53	4. 59. 52
22	Su.	10. 6. 42. 5	10. 12. 52. 19	5. 9. 11	5. 14. 45
23	M.	10. 18. 58. 46	10. 25. 1. 52	5. 16. 42	5. 15. 7
24	Tu.	11. 1. 2. 17	11. 7. 0. 30	5. 10. 6	5. 1. 43
25	W.	11. 12. 57. 14	11. 18. 52. 58	4. 50. 10	4. 35. 32
26	Th.	11. 24. 48. 26	0. 0. 44. 5	4. 17. 59	3. 57. 40
27	F.	0. 6. 40. 36	0. 12. 38. 29	3. 34. 45	3. 9. 25
28	Sa.	0. 18. 38. 16	0. 24. 40. 23	2. 41. 52	2. 12. 22
29	Su.	1. 0. 45. 19	1. 6. 53. 23	1. 41. 8	1. 8. 29
30	M.	1. 13. 4. 58	1. 19. 20. 14	0. 34. 44	0. 0. 15

[126]		NOVEMBER 1789.					VI.
Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clination at Noon.	D's De- clination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Su.	15	11. 12	19. 56	25. 53	10. 59 N	12. 44 N
2	M.	16	11. 59	31. 58	38. 10	14. 21	15. 50
3	Tu.	17	12. 48	44. 31	50. 59	17. 9	18. 16
4	W.	18	13. 39	57. 35	64. 18	19. 10	19. 50
5	Th.	19	14. 31	71. 6	78. 0	20. 14	20. 23
6	F.	20	15. 24	84. 56	91. 55	20. 16	19. 52
7	Sa.	21	16. 17	98. 53	105. 52	19. 12	18. 15
8	Su.	22	17. 10	112. 48	119. 42	17. 3	15. 36
9	M.	23	18. 3	126. 33	133. 22	13. 56	12. 3
10	Tu.	24	18. 55	140. 8	146. 52	9. 59	7. 46
11	W.	25	19. 47	153. 35	160. 18	5. 26	3. 0 N
12	Th.	26	20. 39	167. 2	173. 48	0. 31 N	2. 0 S
13	F.	27	21. 32	180. 38	187. 33	4. 30 S	6. 57
14	Sa.	28	22. 27	194. 32	201. 37	9. 18	11. 31
15	Su.	29	23. 24	208. 49	216. 6	13. 33	15. 23
16	M.	1	♄	223. 28	230. 54	16. 57	18. 15
17	Tu.	2	♅. 21	238. 22	245. 50	19. 15	19. 57
18	W.	3	1. 18	253. 15	260. 36	20. 19	20. 23
19	Th.	4	2. 14	267. 50	274. 55	20. 9	19. 38
20	F.	5	3. 8	281. 51	288. 36	18. 51	17. 50
21	Sa.	6	3. 58	295. 10	301. 33	16. 36	15. 11
22	Su.	7	4. 45	307. 46	313. 50	13. 37	11. 56
23	M.	8	5. 30	319. 45	325. 33	10. 8	8. 15
24	Tu.	9	6. 13	331. 15	336. 52	6. 17	4. 16
25	W.	10	6. 55	342. 26	347. 59	2. 14 S	0. 11 S
26	Th.	11	7. 36	353. 32	359. 6	1. 53 N	3. 55 N
27	F.	12	8. 18	4. 42	10. 23	5. 56	7. 54
28	Sa.	13	9. 1	16. 9	22. 1	9. 48	11. 37
29	Su.	14	9. 47	28. 1	34. 10	13. 20	14. 54
30	M.	15	10. 35	40. 27	46. 53	16. 20	17. 35

VII. NOVEMBER 1789. [127]

Days of the Month.	Days of the Week.	Semidr. Δ at Noon. M. S.	Semidr. Δ at Midnight. M. S.	Hor. Par. Δ at Noon. M. S.	Hor. Par. Δ at Midnight. M. S.	Propor. Lo- car at Noon.	Propor. Lo- car at Midn.
1	Su.	14. 55	14. 58	54. 46	54. 56	5167	5154
2	M.	15. 1	15. 4	55. 7	55. 19	5140	5124
3	Tu.	15. 8	15. 12	55. 32	55. 46	5107	5089
4	W.	15. 16	15. 19	56. 0	56. 14	5071	5053
5	Th.	15. 23	15. 27	56. 28	56. 43	5035	5015
6	F.	15. 31	15. 35	56. 58	57. 13	4996	4977
7	Sa.	15. 40	15. 44	57. 29	57. 44	4957	4938
8	Su.	15. 48	15. 53	58. 0	58. 16	4918	4898
9	M.	15. 57	16. 1	58. 32	58. 47	4878	4860
10	Tu.	16. 5	16. 9	59. 2	59. 17	4842	4823
11	W.	16. 13	16. 16	59. 30	59. 43	4808	4792
12	Th.	16. 19	16. 22	59. 54	60. 3	4778	4768
13	F.	16. 24	16. 25	60. 10	60. 14	4759	4754
14	Sa.	16. 25	16. 25	60. 15	60. 14	4753	4754
15	Su.	16. 23	16. 21	60. 9	60. 1	4760	4770
16	M.	16. 18	16. 14	59. 50	59. 35	4783	4801
17	Tu.	16. 9	16. 4	59. 18	58. 58	4822	4846
18	W.	15. 58	15. 52	58. 37	58. 14	4872	4901
19	Th.	15. 46	15. 39	57. 50	57. 25	4931	4962
20	F.	15. 32	15. 25	57. 0	56. 36	4994	5025
21	Sa.	15. 19	15. 13	56. 13	55. 52	5054	5081
22	Su.	15. 8	15. 3	55. 33	55. 15	5106	5129
23	M.	14. 59	14. 56	55. 0	54. 47	5149	5166
24	Tu.	14. 53	14. 51	54. 36	54. 29	5181	5190
25	W.	14. 49	14. 49	54. 24	54. 21	5197	5201
26	Th.	14. 49	14. 49	54. 21	54. 24	5201	5197
27	F.	14. 51	14. 53	54. 29	54. 36	5190	5181
28	Sa.	14. 55	14. 58	54. 45	54. 56	5169	5154
29	Su.	15. 1	15. 5	55. 8	55. 22	5138	5120
30	M.	15. 9	15. 14	55. 37	55. 53	5100	5080

Distances of D's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.
1	Aldebaran.	44.58.15		43.27.40		41.56.57		40.26.5		38.55.4		37.23.56		35.52.40		34.21.17	
2		32.49.48		31.18.13		29.46.33		28.14.48		26.42.58		25.11.5		23.39.11		22.7.16	
3		20.35.19															
3	Pollux.	63.27.1		61.55.36		60.24.4		58.52.27		57.20.43		55.48.54		54.17.2		52.45.6	
4		51.13.7		49.41.4		48.9.0		46.36.56		45.4.52		43.32.50		42.0.52		40.28.58	
5		38.57.8															
5	Regulus.	74.38.28		73.2.21		71.26.3		69.49.36		68.12.58		66.36.10		64.59.12		63.22.3	
6		61.44.44		60.7.13		58.29.33		56.51.42		55.13.41		53.35.31		51.57.11		50.18.41	
7		48.40.2		47.1.13		45.22.15		43.43.9		42.3.55		40.24.32		38.45.4		37.5.28	
8	Spica ♀	35.25.47		33.46.1		32.6.10		30.26.17		28.46.19							
8		75.18.28		73.35.24		71.52.6		70.8.36		68.24.52		66.40.55		64.56.44		63.12.19	
9		61.27.40															
10	The Sun.	114.38.33		113.4.43		111.30.40		109.56.24		120.51.48		119.18.48		117.45.36		116.12.11	
7		102.1.48		100.26.14		98.50.28		97.14.28		108.21.55		106.47.13		105.12.17		103.37.9	
9		89.11.7		87.33.47		85.56.13		84.18.27		95.38.15		94.1.48		92.25.8		90.48.14	
10		76.6.22		74.27.19		72.48.3		71.8.36		82.40.27		81.2.15		79.23.50		77.45.12	
11										69.28.56		67.49.5		66.9.3		64.28.50	

IX. NOVEMBER 1789. [129]

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
12	The Sun.	62. 48. 26	61. 7. 51	59. 27. 7	57. 46. 13	56. 5. 10	54. 23. 58	52. 42. 39	51. 1. 12
13		49. 19. 37	47. 37. 56	45. 56. 8	44. 14. 15	42. 32. 17	40. 50. 15	39. 8. 10	
18	α Pegasi.	95. 8. 54	93. 28. 34	91. 48. 35	90. 8. 56	88. 29. 38	86. 50. 42	85. 12. 8	83. 33. 57
19		81. 56. 9	80. 18. 44	78. 41. 44	77. 5. 8	75. 28. 56	73. 53. 10	72. 17. 49	70. 42. 54
20		69. 8. 24	67. 34. 21	66. 0. 45	64. 27. 35	62. 54. 52	61. 22. 37	59. 50. 49	58. 19. 30
21		56. 48. 39	55. 18. 17	53. 48. 26	52. 19. 4	50. 50. 13	49. 21. 53	47. 54. 5	46. 26. 49
22		45. 0. 6							
22	α Arietis.	87. 10. 46	85. 39. 14	84. 7. 58	82. 36. 57	81. 6. 12	79. 35. 42	78. 5. 25	76. 35. 23
23		75. 5. 35	73. 36. 1	72. 6. 39	70. 37. 29	69. 8. 31	67. 39. 43	66. 11. 6	64. 42. 39
24		63. 14. 23	61. 46. 17	60. 18. 19	58. 50. 29	57. 22. 48	55. 55. 15	54. 27. 49	53. 0. 30
25	Aldebaran.	51. 33. 18	50. 6. 13	48. 39. 14	47. 12. 21	45. 45. 34			
25							78. 31. 23	75. 34. 24	74. 5. 54
26		72. 37. 24	71. 8. 53	69. 40. 19	68. 11. 42	66. 43. 2	65. 14. 17	63. 45. 28	62. 16. 33
27		60. 47. 34	59. 18. 29	57. 49. 17	56. 19. 58	54. 50. 33	53. 21. 0	51. 51. 18	50. 21. 29
28		48. 51. 31	47. 21. 25	45. 51. 9	44. 20. 44	42. 50. 9	41. 19. 24	39. 48. 29	38. 17. 24
29		36. 46. 9	35. 14. 44	33. 43. 9	32. 11. 25	30. 39. 31	29. 7. 26	27. 35. 14	26. 2. 56
30		24. 30. 32	22. 57. 56	21. 25. 20	19. 52. 48	18. 20. 20	16. 48. 2	15. 16. 2	13. 44. 19
D.1		12. 12. 54							

[130] NOVEMBER 1789. X.																
Distances of γ 's Center from Sun, and from Stars west of her.																
Days.	Stars Names.	Noon.	3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
1	α Pegasi.	35. 34. 47	36. 56. 51	38. 19. 34	39. 42. 56	41. 6. 58	42. 31. 35	43. 56. 43	45. 22. 21							
2		46. 48. 31	48. 15. 4	49. 42. 2	51. 9. 24	52. 37. 11	54. 5. 18	55. 33. 46	57. 2. 34							
3		58. 31. 42	60. 1. 9	61. 30. 54	63. 0. 57	64. 31. 15										
3	α Arietis.															
4		27. 1. 9	28. 31. 15	30. 1. 59	31. 33. 22	33. 5. 20	34. 37. 43	36. 10. 31	37. 43. 46							
5		39. 17. 25	40. 51. 23	42. 25. 45	44. 0. 23	45. 35. 24	47. 10. 42	48. 46. 16	50. 22. 6							
6		51. 58. 12														
6	Aldeba- ran.	18. 28. 50	20. 4. 59	21. 41. 32	23. 18. 28	24. 55. 48	26. 33. 30	28. 11. 31	29. 49. 51							
7		31. 28. 30	33. 7. 25	34. 46. 36	36. 26. 2	38. 5. 45	39. 45. 41	41. 25. 51	43. 6. 16							
8		44. 46. 55	46. 27. 49	48. 8. 58	49. 50. 21	51. 31. 57	53. 13. 48	54. 55. 53	56. 38. 12							
9	Pollux.	58. 20. 44	60. 3. 30	61. 46. 30	63. 29. 43	65. 13. 10	66. 56. 51	68. 40. 46	70. 24. 54							
10		72. 9. 16														
10		31. 22. 16	32. 59. 55	34. 38. 16	36. 17. 21	37. 57. 8	39. 37. 33	41. 18. 33	43. 0. 5							
11	Regulus.	44. 42. 9	46. 24. 38	48. 7. 32	49. 50. 51	51. 34. 35	53. 18. 39	55. 3. 3	56. 47. 43							
12		58. 32. 43														
12		21. 33. 15	23. 17. 46	25. 2. 47	26. 48. 19	28. 34. 18	30. 20. 46	32. 7. 35	33. 54. 44							
13		35. 42. 14	37. 29. 56	39. 17. 51	41. 5. 57	42. 54. 16	44. 42. 43	46. 31. 16	48. 19. 56							
14		50. 8. 43	51. 57. 34	53. 46. 28	55. 35. 24	57. 24. 23	59. 13. 21	61. 2. 18	62. 51. 13							
15		64. 40. 6	66. 28. 56	68. 17. 40	70. 6. 19	71. 54. 52										

XI. NOVEMBER 1789. [131]

Day.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
19		42. 43. 47	44. 14. 4	45. 44. 0	47. 13. 33	48. 42. 45	50. 11. 35	51. 40. 5	53. 8. 13
20		54. 39. 1	56. 3. 28	57. 30. 35	58. 57. 23	60. 23. 51	61. 50. 1	63. 15. 54	64. 41. 29
21		66. 6. 47	67. 31. 47	68. 56. 32	70. 21. 1	71. 45. 14	73. 9. 13	74. 32. 59	75. 56. 31
22		77. 19. 49	78. 42. 55	80. 5. 49	81. 28. 32	82. 51. 4	84. 13. 27	85. 35. 40	86. 57. 45
23	The Sun.	88. 19. 41	89. 41. 28	91. 3. 9	92. 24. 44	93. 46. 12	95. 7. 36	96. 28. 57	97. 50. 13
24		99. 11. 26	100. 32. 35	101. 53. 42	103. 14. 48	104. 35. 52	105. 56. 57	107. 18. 3	108. 39. 9
25		110. 0. 17	111. 21. 26	112. 42. 37	114. 3. 52	115. 25. 9	116. 46. 31	118. 7. 58	119. 29. 31
26		120. 51. 9							
27		84. 39. 41	86. 8. 33	87. 37. 18	89. 5. 58	90. 34. 32	92. 3. 1	93. 31. 27	94. 59. 48
28	Antares.	96. 28. 6	97. 56. 21	99. 24. 33	100. 52. 44	102. 20. 52			
29		58. 28. 11	59. 46. 1	61. 4. 12	62. 22. 42	53. 20. 34	54. 36. 53	55. 53. 36	57. 10. 42
30	Aquilæ.	68. 59. 48	70. 29. 4	71. 40. 34	73. 1. 20	63. 41. 32	65. 0. 40	66. 20. 5	67. 39. 48
31		79. 48. 52	81. 11. 4	82. 33. 29	83. 56. 7	74. 22. 22	75. 43. 38	77. 5. 9	78. 26. 53
32		43. 6. 58	44. 32. 25	45. 58. 24	47. 24. 54	37. 31. 10	38. 54. 11	40. 17. 50	41. 42. 5
33	α Pegasi.	54. 44. 27	56. 13. 37	57. 43. 10	59. 13. 6	48. 51. 55	50. 19. 24	51. 47. 18	53. 15. 40
34		66. 48. 15				60. 43. 26	62. 14. 7	63. 45. 9	65. 16. 32

[132] NOVEMBER 1789. XII.

Configurations of the SATELLITES of JUPITER
at Five o'Clock in the Morning.

1	·4	·3	·2	○	1.0
2	·4	·3	1.	○	·2
3	·4	·3	2.	○	·1
4	·2	·4	1.	○	·3
5				○	1. 2. 4. ·3
6		·1		○	2. 3. ·4
7		2.	3.	○	1. ·4
8	1.0	·3	·2	○	·4
9		·3	1.	○	·2 4.
10	2●	·3		○	·1 4.
11		·2	1.	○	·3 4.
12				○	·2 ·1 4. ·3
13		·1	4.	○	2. 3.
14		4.	2.	○	3. 1.
15	4.	·3	·2 ·1	○	
16	4.	·3		○	·2 1●
17	4.	·3		○	·1 2●
18	·4	2.	1.	○	·3
19	·4			○	·2 ·1 ·3
20	·4	·1		○	2. 3.
21	3●	2.	·4	○	1.
22		3.	·2 ·1	○	·4
23		3.		○	1. ·2 ·4
24	1.0	·3		○	2. ·4
25		2.	1.	○	·3 ·4
26	2.0			○	·1 ·3 4.
27		1.		○	2. 3. 4.
28		2.		○	1 3 4
29		·2 ·1		○	4.
30		3.	4.	○	1. ·2

I. DECEMBER 1789. [133]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon. D. H. M.
1	Tu.		Full Moon --- 2. 4. 39
2	W.		Last Quarter --- 9. 6. 17
3	Th.		New Moon --- 16. 4. 43
4	F.		First Quarter --- 24. 1. 11
5	Sa.		Full Moon --- 31. 19. 0
			Other Phenomena.
			D. H. M.
6	Su.	2d Sunday in Advent. Ni-	1. 18. 29 ☾ ☽ ☽
7	M.	[cholas.	2. 9. 53 ☾ ☽ ☽
8	Tu.	Conception of V. Mary.	3. 0. 26 ☾ ☽ ☽
9	W.		22. 1 ☾ ☽ ☽
10	Th.		6. ☽ ☽ ☽ diff. Lat.
11	F.		8'.
12	Sa.		11. 54 Im. of 1 ad α ☽
			* 10' N. of ☾'s center.
13	Su.	3d Su. in Adv. Lucy.	12. 46 Em. * 10' 1/2 N.
14	M.		14. 21 ☾ 2 ad α ☽
15	Tu.		18. 42 ☾ ☽ ☽
16	W.	O Sap. Camb. Ter. ends.	9. 11. 46 ☾ ☽ ☽
17	Th.	Oxf. Ter. ends.	11. 13. 41 ☾ ☽ ☽
18	F.		13. 1. 49 ☾ ☽ ☽
19	Sa.		23. 32 ☾ ☽ ☽
20	Su.	4th Sunday in Advent.	14. 4. 13 ☾ ☽ ☽
21	M.	St. Thomas.	8. 54 ☾ ☽ ☽
22	Tu.		16. ☽ Stationary.
23	W.		18. 22. 17 ☾ ☽ ☽
24	Th.		20. 19. 59 ☽ enters ☽
25	F.	Christmas Day.	23. ☽ ☽ ☽ diff. Lat.
26	Sa.	St. Stephen.	47'.
			24. ☽ ☽ ☽ diff. Lat.
			54'.
27	Su.	1st Sun. after Christ. St.	17. 16 ☾ ☽ ☽
28	M.	Innocents. [John.	29. ☽ ☽ ☽ diff. Lat.
29	Tu.		44'.
30	W.		3. 18 ☾ ☽ ☽
31	Th.	Silvester.	18. 38 ☾ ☽ ☽
			30. 9. 3 ☾ ☽ ☽
			31. 6. 19 ☾ ☽ ☽

[134] D E C E M B E R 1789. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D.M.S.	M. S.	S.
1	Tu.	8. 9. 48. 53	16.32.38,5	21.56.44	10. 22,1	23,5
2	W.	8. 10. 49. 48	16.36.58,5	22. 5.33	9. 58,6	24,0
3	Th.	8. 11. 50. 43	16.41.19,1	22.13.56	9. 34,6	24,6
4	F.	8. 12. 51. 39	16.45.40,3	22.21.53	9. 10,0	25,1
5	Sa.	8. 13. 52. 37	16.50. 2,1	22.29.24	8. 44,9	25,7
6	Su.	8. 14. 53. 35	16.54.24,4	22.36.28	8. 19,2	26,2
7	M.	8. 15. 54. 35	16.58.47,3	22.43. 6	7. 53,0	26,7
8	Tu.	8. 16. 55. 36	17. 3.10,6	22.49.18	7. 26,3	27,2
9	W.	8. 17. 56. 38	17. 7.34,3	22.55. 2	6. 59,1	27,6
10	Th.	8. 18. 57. 42	17.11.58,6	23. 0.19	6. 31,5	28,0
11	F.	8. 19. 58. 46	17.16.23,2	23. 5. 9	6. 3,5	28,4
12	Sa.	8. 20. 59. 51	17.20.48,2	23. 9.31	5. 35,1	28,7
13	Su.	8. 22. 0. 58	17.25.13,7	23.13.26	5. 6,4	29,1
14	M.	8. 23. 2. 6	17.29.39,4	23.16.53	4. 37,3	29,3
15	Tu.	8. 24. 3. 14	17.34. 5,3	23.19.51	4. 8,0	29,6
16	W.	8. 25. 4. 23	17.38.31,5	23.22.22	3. 38,4	29,8
17	Th.	8. 26. 5. 33	17.42.57,9	23.24.25	3. 8,6	29,9
18	F.	8. 27. 6. 43	17.47.24,5	23.25.59	2. 38,7	30,0
19	Sa.	8. 28. 7. 53	17.51.51,1	23.27. 5	2. 8,7	30,1
20	Su.	8. 29. 9. 3	17.56.17,8	23.27.43	1. 38,6	30,1
21	M.	9. 0. 10. 14	18. 0.44,6	23.27.52	1. 8,5	30,1
22	Tu.	9. 1. 11. 25	18. 5.11,4	23.27.33	0. 38,4	30,1
23	W.	9. 2. 12. 36	18. 9.38,1	23.26.46	0. 8,3	30,0
24	Th.	9. 3. 13. 46	18.14. 4,7	23.25.30	Ad:21,7	30,0
25	F.	9. 4. 14. 57	18.18.31,3	23.23.46	0. 51,7	29,8
26	Sa.	9. 5. 16. 8	18.22.57,8	23.21.34	1. 21,5	29,6
27	Su.	9. 6. 17. 18	18.27.24,0	23.18.54	1. 51,1	29,4
28	M.	9. 7. 18. 28	18.31.50,0	23.15.46	2. 20,5	29,2
29	Tu.	9. 8. 19. 38	18.36.15,8	23.12.11	2. 49,7	28,9
30	W.	9. 9. 20. 48	18.40.41,3	23. 8. 7	3. 18,6	28,6
31	Th.	9. 10. 21. 57	18.45. 6,6	23. 3.35	3. 47,2	

III. DECEMBER 1789. [135]

Days.	Semidia- meter of the Sun.	Time of D ^o passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 17, 1	1. 10, 2	2. 32, 2	9. 993551	7. 18. 15
7	16. 17, 9	1. 10, 7	2. 32, 5	9. 993220	7. 17. 56
13	16. 18, 5	1. 11, 1	2. 32, 7	9. 992972	7. 17. 37
19	16. 19, 0	1. 11, 1	2. 32, 8	9. 992786	7. 17. 18
25	16. 19, 2	1. 11, 1	2. 32, 9	9. 992658	7. 16. 59

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Immerfions.		II. Satellite. Immerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
*1	13. 30. 35	*4	11. 14. 6	5	0. 27. 21 I
3	7. 58. 16	8	0. 29. 17	5	3. 58. 52 E
5	2. 25. 54	*11	13. 44. 25	12	4. 22. 6 I
6	20. 53. 29	15	2. 59. 36	12	7. 53. 19 E
*8	15. 21. 3	*18	16. 14. 52	19	8. 16. 34 I
10	9. 48. 37	22	5. 29. 50	*19	11. 47. 29 E
12	4. 16. 8	*25	18. 44. 59	*26	12. 10. 59 I
13	22. 43. 41	29	8. 0. 17	*26	15. 41. 37 E
*15	17. 11. 10			IV. Satellite.	
*17	11. 38. 41				
19	6. 6. 9				
21	0. 33. 39			*15	13. 56. 23 I
*22	19. 1. 8			*15	18. 41. 35 E
*24	13. 28. 37				
26	7. 56. 7				
28	2. 23. 36				
29	20. 51. 8				
*31	15. 18. 40				

[136] DECEMBER 1789. IV.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY.

1	6. 3. 35	4. 43 N	7. 22. 15	1. 34 N	16. 51 S	22. 50
4	6. 14. 31	3. 40	7. 26. 35	1. 13	18. 15	22. 54
7	6. 24. 40	2. 32	8. 1. 1	0. 50	19. 34	22. 59
10	7. 4. 10	1. 25	8. 5. 31	0. 28	20. 47	23. 4
13	7. 13. 12	0. 19 N	8. 10. 5	0. 6 N	21. 53	23. 10
16	7. 21. 53	0. 44 S	8. 14. 41	0. 15 S	22. 50	23. 17
19	8. 0. 18	1. 45	8. 19. 19	0. 35	23. 37	23. 24
22	8. 8. 35	2. 43	8. 23. 59	0. 53	24. 13	23. 31
25	8. 16. 50	3. 37	8. 28. 40	1. 11	24. 38	23. 38
28	8. 25. 7	4. 27	9. 3. 26	1. 25	24. 51	23. 46
31	9. 3. 32	5. 11	9. 8. 12	1. 39	24. 52	23. 54

VENUS.

1	0. 5. 18	3. 10 S	9. 24. 0	2. 27 S	23. 44 S	3. 13
7	0. 14. 51	2. 56	10. 0. 55	2. 22	22. 17	3. 16
13	0. 24. 26	2. 37	10. 7. 44	2. 13	20. 30	3. 18
19	1. 4. 2	2. 14	10. 14. 26	1. 58	18. 24	3. 18
25	1. 13. 38	1. 45	10. 21. 2	1. 39	16. 4	3. 18

MARS.

1	3. 20. 26	1. 38 N	4. 26. 42	2. 27 N	14. 56 N	17. 23
7	3. 23. 12	1. 41	4. 28. 26	2. 39	14. 31	17. 5
13	3. 25. 56	1. 43	4. 29. 52	2. 52	14. 12	16. 44
19	3. 28. 39	1. 45	5. 0. 57	3. 4	14. 0	16. 22
25	4. 1. 21	1. 46	5. 1. 40	3. 16	13. 57	15. 58

JUPITER.

1	4. 20. 30	0. 53 N	5. 0. 59	0. 55 N	12. 0 N	17. 38
7	4. 20. 58	0. 53	5. 1. 13	0. 56	11. 57	17. 13
13	4. 21. 26	0. 54	5. 1. 20	0. 57	11. 55	16. 47
19	4. 21. 54	0. 54	5. 1. 20	0. 59	11. 57	16. 20
25	4. 22. 23	0. 54	5. 1. 13	1. 1	12. 0	15. 53

SATURN. $\square 7^d. 23^h$.

1	11. 22. 34	2. 11 S	11. 16. 42	2. 14 S	7. 18 S	6. 40
7	11. 22. 46	2. 11	11. 16. 52	2. 13	7. 14	6. 15
13	11. 22. 58	2. 12	11. 17. 6	2. 12	7. 8	5. 50
19	11. 23. 9	2. 12	11. 17. 23	2. 11	7. 0	5. 24
25	11. 23. 21	2. 12	11. 17. 42	2. 9	6. 51	4. 59

V. D E C E M B E R 1789. [137]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Tu.	1. 25. 39. 28	2. 2. 2. 43	0. 34. 34 S	1. 9. 18 S
2	W.	2. 8. 30. 5	2. 15. 1. 32	1. 43. 29	2. 16. 40
3	Th.	2. 21. 37. 1	2. 28. 16. 22	2. 48. 19	3. 17. 58
4	F.	3. 4. 59. 23	3. 11. 45. 54	3. 45. 8	4. 9. 22
5	Sa.	3. 18. 35. 34	3. 25. 28. 7	4. 30. 12	4. 47. 21
6	Su.	4. 2. 23. 15	4. 9. 20. 37	5. 0. 23	5. 9. 4
7	M.	4. 16. 19. 54	4. 23. 20. 50	5. 13. 13	5. 12. 43
8	Tu.	5. 0. 23. 2	5. 7. 26. 23	5. 7. 32	4. 57. 41
9	W.	5. 14. 30. 29	5. 21. 35. 13	4. 43. 18	4. 24. 36
10	Th.	5. 28. 40. 16	6. 5. 45. 31	4. 1. 50	3. 35. 21
11	F.	6. 12. 50. 39	6. 19. 55. 34	3. 5. 35	2. 32. 58
12	Sa.	6. 26. 59. 55	7. 4. 3. 29	1. 58. 3	1. 21. 25
13	Su.	7. 11. 5. 55	7. 18. 6. 57	0. 43. 39 S	0. 5. 22 S
14	M.	7. 25. 6. 9	8. 2. 3. 14	0. 32. 46 N	1. 10. 13 N
15	Tu.	8. 8. 57. 42	8. 15. 49. 16	1. 46. 20	2. 20. 36
16	W.	8. 22. 37. 29	8. 29. 22. 2	2. 52. 33	3. 21. 45
17	Th.	9. 6. 2. 38	9. 12. 39. 0	3. 47. 50	4. 10. 35
18	F.	9. 19. 11. 1	9. 25. 38. 33	4. 29. 42	4. 45. 9
19	Sa.	10. 2. 1. 37	10. 8. 20. 16	4. 56. 48	5. 4. 43
20	Su.	10. 14. 34. 41	10. 20. 45. 6	5. 8. 52	5. 9. 23
21	M.	10. 26. 51. 52	11. 2. 55. 18	5. 6. 21	4. 59. 53
22	Tu.	11. 8. 55. 58	11. 14. 54. 19	4. 50. 9	4. 37. 19
23	W.	11. 20. 50. 57	11. 26. 46. 28	4. 21. 33	4. 3. 1
24	Th.	0. 2. 41. 30	0. 8. 36. 40	3. 41. 54	3. 18. 25
25	F.	0. 14. 32. 40	0. 20. 30. 8	2. 52. 42	2. 25. 3
26	Sa.	0. 26. 29. 46	1. 2. 32. 6	1. 55. 37	1. 24. 42
27	Su.	1. 8. 37. 52	1. 14. 47. 29	0. 52. 33 N	0. 19. 28 N
28	M.	1. 21. 1. 34	1. 27. 20. 28	0. 14. 13 S	0. 48. 6 S
29	Tu.	2. 3. 44. 34	2. 10. 14. 7	1. 21. 49	1. 54. 54
30	W.	2. 16. 49. 14	2. 23. 29. 59	2. 26. 52	2. 57. 15
31	Th.	3. 0. 16. 12	3. 7. 7. 43	3. 25. 30	3. 51. 8

[138] D E C E M B E R 1789. VI.							
Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascension at Noon.	D's Right Ascens. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	16	11. 25	53. 28	60. 12	18. 38 N	19. 28 N
2	W.	17	12. 17	67. 3	74. 1	20. 3	20. 22
3	Th.	18	13. 11	81. 4	88. 10	20. 24	20. 9
4	F.	19	14. 6	95. 17	102. 25	19. 37	18. 48
5	Sa.	20	15. 0	109. 30	116. 32	17. 43	16. 22
6	Su.	21	15. 53	123. 30	130. 23	14. 46	12. 58
7	M.	22	16. 44	137. 12	143. 57	10. 58	8. 49
8	Tu.	23	17. 35	150. 38	157. 17	6. 33	4. 11 N
9	W.	24	18. 25	163. 55	170. 32	1. 45 N	0. 43 S
10	Th.	25	19. 17	177. 10	183. 51	3. 10 S	5. 35
11	F.	26	20. 8	190. 36	197. 25	7. 55	10. 10
12	Sa.	27	21. 2	204. 19	211. 20	12. 15	14. 10
13	Su.	28	21. 57	218. 26	225. 37	15. 52	17. 20
14	M.	29	22. 53	232. 53	240. 12	18. 32	19. 27
15	Tu.	30	23. 50	247. 33	254. 52	20. 3	20. 22
16	W.	1	0	262. 8	269. 20	20. 23	20. 6
17	Th.	2	0. 44	276. 24	283. 20	19. 32	18. 42
18	F.	3	1. 36	290. 7	296. 43	17. 38	16. 22
19	Sa.	4	2. 25	303. 9	309. 25	14. 54	13. 17
20	Su.	5	3. 11	315. 31	321. 29	11. 33	9. 42
21	M.	6	3. 55	327. 20	333. 4	7. 46	5. 46
22	Tu.	7	4. 37	338. 43	344. 19	3. 44 S	1. 41 S
23	W.	8	5. 18	349. 53	355. 26	0. 23 N	2. 26 N
24	Th.	9	6. 0	1. 0	6. 36	4. 28	6. 27
25	F.	10	6. 42	12. 16	18. 0	8. 23	10. 15
26	Sa.	11	7. 26	23. 52	29. 50	12. 1	13. 41
27	Su.	12	8. 12	35. 57	42. 13	15. 13	16. 36
28	M.	13	9. 1	48. 39	55. 15	17. 48	18. 48
29	Tu.	14	9. 52	62. 0	68. 54	19. 35	20. 6
30	W.	15	10. 46	75. 56	83. 4	20. 22	20. 21
31	Th.	16	11. 42	90. 17	97. 33	20. 2	19. 25

VII. DECEMBER 1789. [139]

Days of the Month.	Days of the Week.	Semidr. γ at Noon. M. S.	Semidr. γ at Mid-night. M. S.	Hor. Par. γ at Noon. M. S.	Hor. Par. γ at Midnight. M. S.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
1	Tu.	15. 18	15. 23	56. 9	56. 27	5059	5036
2	W.	15. 28	15. 32	56. 44	57. 0	5014	4994
3	Th.	15. 36	15. 41	57. 16	57. 32	4973	4953
4	F.	15. 45	15. 49	57. 47	58. 1	4934	4917
5	Sa.	15. 52	15. 55	58. 14	58. 26	4901	4886
6	Su.	15. 58	16. 1	58. 37	58. 46	4872	4861
7	M.	16. 3	16. 5	58. 54	59. 2	4852	4842
8	Tu.	16. 7	16. 8	59. 8	59. 14	4834	4827
9	W.	16. 10	16. 11	59. 18	59. 22	4822	4817
10	Th.	16. 11	16. 12	59. 24	59. 26	4815	4812
11	F.	16. 12	16. 12	59. 26	59. 25	4812	4813
12	Sa.	16. 11	16. 9	59. 22	59. 17	4817	4823
13	Su.	16. 7	16. 5	59. 10	59. 2	4832	4842
14	M.	16. 2	15. 59	58. 52	58. 40	4854	4869
15	Tu.	15. 56	15. 52	58. 27	58. 12	4885	4903
16	W.	15. 47	15. 42	57. 55	57. 37	4924	4947
17	Th.	15. 37	15. 31	57. 18	56. 58	4971	4996
18	F.	15. 26	15. 21	56. 39	56. 19	5021	5046
19	Sa.	15. 16	15. 11	56. 0	55. 42	5071	5094
20	Su.	15. 6	15. 2	55. 25	55. 10	5116	5136
21	M.	14. 58	14. 55	54. 56	54. 45	5154	5169
22	Tu.	14. 53	14. 51	54. 36	54. 29	5181	5190
23	W.	14. 49	14. 49	54. 24	54. 22	5197	5199
24	Th.	14. 49	14. 50	54. 23	54. 26	5198	5194
25	F.	14. 52	14. 54	54. 32	54. 41	5186	5174
26	Sa.	14. 57	15. 1	54. 52	55. 5	5159	5142
27	Su.	15. 5	15. 10	55. 21	55. 38	5122	5099
28	M.	15. 15	15. 20	55. 57	56. 18	5075	5048
29	Tu.	15. 26	15. 32	56. 39	57. 1	5021	4992
30	W.	15. 38	15. 44	57. 23	57. 44	4965	4938
31	Th.	15. 50	15. 55	58. 5	58. 24	4912	4889

Distances of γ 's Center from Sun, and from Stars east of her.

Days.	Stars Names.	Noon.		3 Hours.		6 Hours.		9 Hours.		12 Hours.		15 Hours.		18 Hours.		21 Hours.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1	Pollux.	55.	2.	53.	29.	51.	55.	50.	22.	48.	49.	47.	15.	45.	42.	44.	8.
2		42.	35.	41.	1.	39.	28.	37.	54.	36.	21.	34.	48.	33.	16.	31.	43.
3		30.	11.	30.	11.	18.	18.	58.	58.	45.	21.	45.	44.	2.	2.	37.	37.
3	Regulus.	65.	21.	63.	42.	62.	3.	60.	23.	58.	44.	57.	4.	55.	24.	53.	44.
4		52.	3.	50.	23.	48.	42.	47.	1.	45.	21.	43.	40.	41.	58.	40.	17.
5		38.	36.	36.	55.	35.	13.	33.	32.	31.	51.	30.	9.	28.	28.	26.	47.
6	Spica μ .	25.	6.	25.	6.	12.	12.	24.	24.	1.	1.	1.	1.	26.	26.	16.	16.
6		78.	23.	76.	39.	74.	56.	73.	12.	71.	27.	69.	43.	67.	59.	66.	14.
7		64.	30.	62.	45.	61.	0.	59.	16.	57.	31.	55.	46.	54.	1.	52.	15.
8	The Sun.	50.	30.	48.	45.	46.	59.	45.	14.	43.	28.	41.	43.	39.	57.	38.	11.
9		36.	26.	34.	40.	32.	54.	31.	8.	29.	22.	41.	43.	39.	57.	38.	11.
7		119.	26.	117.	49.	116.	12.	114.	35.	112.	58.	111.	20.	109.	43.	108.	6.
8	The Sun.	106.	28.	104.	50.	103.	13.	101.	35.	99.	57.	98.	19.	96.	41.	95.	3.
9		93.	25.	91.	47.	90.	9.	88.	30.	86.	52.	85.	14.	83.	35.	81.	57.
10		80.	18.	78.	40.	77.	1.	75.	23.	73.	44.	72.	6.	70.	27.	68.	48.
11	The Sun.	67.	10.	65.	31.	63.	52.	62.	14.	60.	35.	58.	57.	57.	18.	55.	39.
12		54.	1.	52.	22.	50.	44.	49.	6.	47.	27.	45.	49.	44.	11.	42.	33.
13		40.	55.	40.	55.	21.	21.	7.	7.	48.	48.	34.	34.	24.	24.	20.	20.

IX. DECEMBER 1789. [141]											
Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.		
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		
17	α Pegasi.	61. 32. 56	60. 0. 12	58. 27. 54	56. 56. 4	67. 47. 55	66. 13. 34	64. 39. 38	63. 6. 5		
18		49. 23. 50	47. 54. 53	46. 26. 30	44. 58. 43	55. 24. 40	53. 53. 43	52. 23. 15	50. 53. 18		
19		37. 49. 28				43. 31. 31	42. 4. 59	40. 39. 6	39. 13. 55		
20		79. 26. 29	77. 55. 0	76. 23. 46	74. 52. 47	73. 22. 3	71. 51. 34	70. 21. 19	68. 51. 17		
21	α Arietis.	67. 21. 30	65. 51. 56	64. 22. 35	62. 53. 27	61. 24. 32	59. 55. 49	58. 27. 17	56. 58. 57		
22		55. 30. 48	54. 2. 50	52. 35. 3	51. 7. 27	49. 40. 1	48. 12. 44	46. 45. 38	45. 18. 42		
23		43. 51. 56									
24		76. 32. 56	75. 4. 20	73. 35. 46	72. 7. 15	70. 38. 45	69. 10. 16	67. 41. 48	66. 13. 19		
25	Aldebaran.	64. 44. 50	63. 16. 20	61. 47. 48	60. 19. 13	58. 50. 35	57. 21. 53	55. 53. 7	54. 24. 16		
26		52. 55. 20	51. 26. 18	49. 57. 10	48. 27. 54	46. 58. 32	45. 29. 1	43. 59. 22	42. 29. 34		
27		40. 59. 38	39. 29. 33	37. 59. 18	36. 28. 53	34. 58. 18	33. 27. 33	31. 56. 36	30. 25. 29		
28		28. 54. 10									
29	Pollux.	71. 43. 37	70. 13. 12	68. 42. 35	67. 11. 46	65. 40. 44	64. 9. 26	62. 37. 56	61. 6. 12		
30		59. 34. 15	58. 2. 6	56. 29. 44	54. 57. 9	53. 24. 23	51. 51. 22	50. 18. 13	48. 44. 52		
31		47. 11. 22	45. 37. 44	44. 3. 58	42. 30. 7	40. 56. 9					
J. 1		70. 8. 27	68. 29. 6	66. 49. 25	65. 9. 28	63. 42. 34	75. 4. 32	73. 26. 11	71. 47. 29		
	Regulus.	56. 45. 8	55. 3. 23	53. 21. 23	51. 39. 8	49. 56. 37	61. 48. 36	60. 7. 44	58. 26. 35		
		43. 4. 25					48. 13. 53	46. 30. 56	44. 47. 47		

Distances of γ 's Center from Sun, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Arietis.	23. 20. 9	24. 49. 27	26. 19. 33	27. 50. 27	29. 22. 10	30. 54. 34	32. 27. 36	34. 1. 12
2		35. 35. 25	37. 10. 3	38. 45. 8	40. 20. 39	41. 56. 37	43. 32. 56	45. 9. 37	46. 46. 38
3		48. 24. 1	50. 1. 43	51. 39. 42	53. 17. 59	54. 56. 32			
3	Aldebaran.	28. 5. 7	29. 45. 24	31. 25. 58	33. 6. 48	21. 27. 20	23. 6. 15	24. 45. 31	26. 25. 8
4		41. 34. 29	43. 16. 38	44. 58. 57	46. 41. 27	34. 47. 55	36. 29. 14	38. 10. 47	39. 52. 31
5		55. 16. 25	56. 59. 51	58. 43. 24	60. 27. 6	48. 24. 8	50. 6. 59	51. 49. 58	53. 33. 7
6		69. 7. 21				62. 10. 55	63. 54. 51	65. 38. 55	67. 23. 4
7									
7	Pollux.	28. 32. 35	30. 8. 44	31. 45. 39	33. 23. 18	35. 1. 40	36. 40. 40	38. 20. 12	40. 0. 14
8		41. 40. 46	43. 21. 38	45. 2. 49	46. 44. 20	48. 26. 10	50. 8. 16	51. 50. 34	53. 33. 4
9		55. 15. 45							
9	Regulus.	18. 19. 9	20. 0. 22	21. 42. 9	23. 24. 29	25. 7. 22	26. 50. 40	28. 34. 21	30. 18. 21
10		32. 2. 41	33. 47. 10	35. 31. 49	37. 16. 39	39. 1. 39	40. 46. 44	42. 31. 55	44. 17. 12
11		46. 2. 34	47. 48. 1	49. 33. 31	51. 19. 4	53. 4. 40	54. 50. 16	56. 35. 53	58. 21. 31
12		60. 7. 9	61. 52. 47	63. 38. 24	65. 23. 59	67. 9. 33	68. 55. 4	70. 40. 32	72. 25. 56
13		74. 11. 17							
13	Spica π	20. 13. 16	21. 59. 6	23. 44. 49	25. 30. 27	27. 15. 58	29. 1. 23	30. 46. 40	32. 31. 49
14		34. 16. 51	36. 1. 45	37. 46. 29	39. 31. 5	41. 15. 31			

XI. DECEMBER 1789. [143]

Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
Days.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
19	45. 39. 15	47. 3. 57	48. 28. 25	49. 52. 39	39. 58. 1	41. 23. 42	42. 49. 8	44. 14. 19
20	56. 50. 34	58. 13. 32	59. 36. 19	60. 58. 55	51. 16. 40	52. 40. 27	54. 4. 2	55. 27. 24
21	67. 49. 33	69. 11. 15	70. 32. 50	71. 54. 19	62. 21. 21	63. 43. 37	65. 5. 44	66. 27. 43
22	78. 40. 21	80. 1. 21	81. 22. 20	82. 43. 16	73. 15. 41	74. 36. 57	75. 58. 10	77. 19. 17
23	89. 27. 48	90. 48. 44	92. 9. 43	93. 30. 45	84. 4. 11	85. 25. 5	86. 45. 59	88. 6. 53
24	100. 16. 56	101. 38. 27	103. 0. 5	104. 21. 51	94. 51. 49	96. 12. 59	97. 34. 13	98. 55. 32
25	111. 12. 52	112. 35. 34	113. 58. 28	115. 21. 34	105. 43. 44	107. 5. 45	108. 27. 57	109. 50. 19
26	65. 30. 19	66. 49. 29	68. 8. 52	69. 28. 29	116. 44. 52	118. 8. 23	119. 32. 7	120. 56. 6
27	76. 9. 53	77. 30. 46	78. 51. 51	80. 13. 8	50. 48. 20	72. 8. 25	73. 28. 41	74. 49. 11
28	87. 2. 33	88. 14. 44	89. 35. 38	90. 56. 12	81. 34. 37	82. 56. 18	84. 18. 11	85. 40. 16
29	39. 14. 44	40. 37. 38	42. 1. 6	43. 25. 9	44. 49. 46	46. 14. 56	47. 40. 37	49. 6. 48
30	50. 33. 29	52. 0. 36	53. 28. 11	54. 56. 12	56. 24. 40	57. 53. 34	59. 22. 53	60. 52. 37
31	62. 22. 47	64. 34. 3	66. 0. 20	68. 27. 52	70. 56. 34	72. 26. 22	74. 57. 4	76. 28. 40
J. 1	19. 9. 4	20. 34. 3	22. 0. 20	23. 27. 52	24. 56. 34	26. 26. 22	27. 57. 4	29. 28. 40
	31. 1. 9	32. 34. 14	34. 7. 57	35. 42. 19	37. 17. 19	38. 52. 50	40. 28. 51	42. 5. 22
	43. 42. 25	45. 19. 56	46. 57. 53	48. 36. 16	50. 15. 6	51. 46. 50	53. 28. 41	55. 40. 16
	23. 25. 26	25. 6. 29	26. 47. 59	28. 29. 55	30. 12. 18	31. 55. 3	33. 38. 6	35. 21. 27
	37. 5. 6							

Configurations of the SATELLITES of JUPITER
Six o'Clock in the Morning.

1	1.0		4.	3	⊙	2.		
2	3.0	4.		2.	1.	⊙		
3	4.				2.	⊙	1.	3
4	4.			1.	⊙		2.	3.
5	4.			2.	⊙		1.3.	
6		4.		2.	3.	1.	⊙	
7			2.	4.	⊙	1.	2.	
8	4.0		3.		1.	⊙	2.	
9	1.●		2.		3.	⊙		4.
10					2.	⊙	1.	3 4
11				1.	⊙		2.	3. 4
12	2.●					⊙	1.	3. 4
13			2.	1.	3.	⊙		
14			3.			⊙	2.	1. 4.
15			3.		1.	⊙	2.	4.
16	1.●		2.	3.	⊙	1.4.		
17			4.	2.	⊙	1.	3.	
18		4.		1.	⊙		2.	3.
19	4.				⊙	2.	1.	3.
20	4.		2.	1.	3.	⊙		
21	4.		1.		⊙	2.	1.	
22	4.	3.		1.	⊙		2.	
23		4.		3.	2.	⊙	1.	
24	1.0		2	4	⊙		3.	
25				1.	⊙	4.	2.	3.
26					⊙	2.	1.	3. 4
27	3.●		2.	1.	⊙			4.
28	2.0		3.		⊙	1.		4.
29		3.		1.	⊙		2.	4.
30			3.	2.	⊙		4.	4.
31			2.	1.	⊙			4.

EXPLANATION and USE OF THE ARTICLES

CONTAINED IN THE

ASTRONOMICAL and NAUTICAL EPHEMERIS.

IT may be proper first to premise, that all the Calculations of the Ephemeris are made according to apparent Time by the Meridian of the Royal Observatory at Greenwich: And the Sun's, Planet's, and Moon's Places, with the Particulars depending on them in the 2d, 4th, 5th, 6th, and 7th Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Center passing the Meridian of Greenwich.

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is
T
supposed

supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, 15 Hours belong to January 11 at Three in the Morning by civil Reckoning.

There are 12 Pages for every Month. The first Column of the first Page of each Month contains the Day of the Month; the second, the Day of the Week expressed concisely by the initial Letter or Letters, *Su.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: The third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of New and Full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phænomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixt Stars not less than the fourth Magnitude, by the Moon, as they should happen at Greenwich by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60° North and 40° South: The Entrance of the Sun into the several Signs, and any other remarkable Phænomena.

The Stars are expressed by Bayer's Characters of Reference. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately after. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of *Im.* or Immersion, to signify the Disappearance behind the Moon; and *Em.* or Emerision to signify the Re-appearance of the same. Thus 8^d. ♃ ♄ 16^h. 22', signifies that the Moon will be in Conjunction with the Star ♄ ♄ on the Eighth Day at 16^h. 22', exclusive of Parallax: And 10^d. ♄ ε ♀ Imm. 9^h. 14'. Em. 10^h. 23' signifies that the Moon will eclipse ε ♀ on the 10th Day, the Immersion being at 9^h. 14', and the Emerision at 10^h. 23', apparent Time at Greenwich.

The

The Occultations set down are those only visible at Greenwich; the Circumstances of which will commonly not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixt Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any Time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where the Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the Ephemeris, and converting it into Degrees, at the Rate of 15° to one Hour, &c. or more briefly by Table XIV. p. 38 of the 2d Edition of the Tables requisite to be used with the Ephemeris. But, as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. Even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixt Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Two first Columns of the Second Page of the Month contain the Day of the Month and Week as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made use of in most of the succeeding Calculations of the Ephemeris, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day. Particularly it may serve, with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the 8th, 9th, 10th, and 11th Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying, as 24^h . is to the Hour from Noon reckoned by the Meridian of Greenwich, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from Greenwich, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15° . and One Minute of Time to 15 Minutes, or more briefly by Table XIV. p. 38, of the Requisite Tables) according as the Place is to the West or to the East of Greenwich. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at $4^h. 35'$, being in $21^\circ. 15'$, Longitude East of Greenwich. The Difference of Longitude turned into Time is $1^h. 25'$, which subtracted from $4^h. 35'$, because the Place is East of Greenwich, leaves $3^h. 10'$, for the Time reduced to the Meridian of Greenwich. The Sun's Longitude the preceding

ceding Noon is $9^{\circ}. 29'. 18''. 2''$, and the following Noon is $10^{\circ}. 0'. 19'. 4''$. the Difference is, $1^{\circ}. 1'. 2''$, or $61'. 2''$, the daily Variation. Then say, as 24^h . is to $3^h. 10'$, so is $61'. 2''$, to $8'. 3''$, which added to $9^{\circ}. 29'. 18''. 2''$, the Sun's Longitude on the preceding Noon, gives $9^{\circ}. 29'. 26'. 5''$, the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the Ephemeris.

The Sun's Longitude serves also to compute the Aberration of the fixt Stars and Planets

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the Ephemeris.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixt Star, suppose one contained in Page 7, of the Requisite Tables; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order
to

to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes the Sun's Declination must be found to the Time given nearly reduced to the Meridian of Greenwich, making Proportion according to the daily Increase or Decrease, in like Manner as was shewn with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shown by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Center over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page 2d; and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; viz. subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the Ephemeris for Noon at Greenwich, Proportion must be made, according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the Ephemeris answering to Noon were computed to 0^h. increased, or 24 Hours of the preceding Day diminished, by the Equation of Time: And the Moon's Places set down for Midnight were computed to 12^h. increased or diminished by the Equation of Time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the Ephemeris, all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But if Time-keepers should be brought into Use at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was set, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed in the Manner explained in my Remarks upon that Subject, in the Philos. Transact.

Transact. Vol. liv. P. 342, for the Year 1764; namely, by taking the Difference of the Sun's true right Ascension, and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1'. to 15'. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude.

The Semidiameter of the Sun, Page 3d, is necessary to reduce the observed Altitude of his upper or lower Limb to that of the Center; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centers. It is also useful to Astronomers to verify or ascertain the Exactness of the Scale of their Micrometers, by Comparison with the Measure of the Sun's horizontal Diameter. This Practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Verse Sine of the uneclipsed Part has been measured with the Micrometer. The Semidiameters of the Sun in Mayer's Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be 16'. 2'', 8. which Mr. Mayer says he deduced from above 130 Observations taken with his Six Feet mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this Opportunity to remark, that the Quadrant here mentioned was given to the University of Göttingen by his late Majesty, and was made by that ingenious Artist the late Mr. John Bird after the Model of the Eight Feet mural Arch, which he finished for the Royal Observatory at Greenwich, and put up there in the Year 1750. Mr. Mayer made his Observations with his Six Feet mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at 23°. 28'. 16'', which Dr. Bradley settled by his Observations, reduced to the Year 1750, at 23°. 28'. 18''. The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about $\frac{1}{2}$ a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement

Agreement of this Table with Dr. Bradley's, see Page 1st of Requisite Tables (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than Two different Tables.

The Time of the Sun's Semidiameter passing the Meridian, serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Center, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an Interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Cosine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of 1' to 15', and 1" to 15'', gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Cosine of his Declination to the logistic Logarithm of his Semidiameter, the Sum is the logistic Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to the sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required.

From the Time of the Sun's Semidiameter passing the Meridian may also be found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.—The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the Nautical Ephemeris; See British Mariner's Guide, P. 49, and Table at the End of the same, Page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's No. signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from time to time. In my Voyage to Barbadoes under the Direction of the Commissioners of Longitude, in 1763 I made a full Trial of the late Mr. Irwin's Marine Chair proposed for this Purpose, but could not derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet focal Length, and Telescopes of Mr. Dollond's Construction with Two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose Half their Use,

Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the Purpose. The Eclipses, carefully calculated and set down in the Ephemeris, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from Greenwich, must turn his Difference of Longitude into Time: See Requisite Table, P. 38, and add it to or subtract it from the Time of the Eclipse set down in the Ephemeris, according as he is to the East or West of Greenwich, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a Hadley's Quadrant, by Reflection from a Basin of Water or Quick-silver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 6000 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made on Purpose. It will be better to take several Altitudes in order to take a Mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shewn in Problems VIII. and IX. Pages 25 and 26 of the Explanation and Use of the Requisite Tables.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on account of the Uncertainty of their Theories; but, if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed One Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the Ephemeris for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emersions signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but, if an astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the Two outer Satellites. The Immersions and Emersions marked with an Asterisk in the Ephemeris are those visible at Greenwich.

To know if an Eclipse will be visible in any Place, find whether Jupiter be 8° above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and
Setting

Setting may be found for any Latitude by a Table of semi-diurnal Arcs, contained in the popular Book called the Mariner's Compass Rectified, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set down in the Ephemeris, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semi-diurnal Arc answering to the same Declination of the Sun: Remembering always, that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semi-diurnal Arc will be more than Six Hours, and if they are of contrary Denominations, will be less than Six Hours. But it may be easier found whether the Eclipse will be visible at Greenwich, or whether it should be properly marked with an asterisk, by the Tables, P. 28—31, annexed to the Nautical Almanac of 1772.

The Immersion or Emerision of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from Greenwich is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the Ephemeris, which must be turned into Degrees, &c. by Requisite Tables, Page 38; and will be East or West of Greenwich, as the Time observed is more or less than that of the Ephemeris.

Example; Suppose an Emerision of the first Satellite should be observed at the Cape of Good Hope, May 9, 1767, at $10^h. 46'. 45''$. apparent Time: The Time by the Ephemeris being $9^h. 33'. 12''$, the Difference is $1^h. 13'. 33''$, whence the Longitude of the Cape should be $18^\circ. 23'. 15''$, East of Greenwich, because the Time supposed to be observed at the Cape is more than that of the Ephemeris.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the Ephemeris for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what Correction the Calculations of the Ephemeris require by the nearest Observations to the given Time that can be obtained; which Correction applied to the Calculation

tulation of the given Eclipse in the Ephemeris, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page 4; serve to know where to look for them in the Heavens, and when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits, where it is most material to observe them. They also serve to enable Persons less skilled to distinguish them from the fixed Stars. Their Declinations and the apparent Times of their passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's right Ascension at Noon in Time from it, to find the Time of the Planet's passing the Meridian nearly, which call T ; take the Difference of the $\odot$ and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right Ascension, or the Sum, if it is retrograde, which call X ; then say, by the Rule of Proportion;

As $24^h. \pm X : T :: X : e$ and $T \pm e$ will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made Use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the $\odot$ and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to $24^h.$ and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example:

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767.

The Sun's right Ascension in Time July 1st is, $6^h. 40'. 25''$. and July 2d, $6^h. 44'. 33''$. by the Ephemeris. Therefore his daily Motion in right Ascension is $4'. 8''$. The Moon's right Ascension July 1st at Noon by the Ephemeris is $159^\circ. 2'$. answering to $10^h. 36'. 8''$. of Time, and July 2d is, $169^\circ. 39'$. answering to $11^h. 18'. 36''$. The Difference is, $42'. 28''$. of Time, from which $4'. 8''$. being subtracted, leaves $38'. 20''$. Subtract $6^h. 40'. 20''$. the Sun's right Ascension July 1st at Noon, from $10^h. 36'. 8''$. the Moon's right Ascension the same Noon, the Remainder $3^h. 55'. 43''$. is the Approximate Time of the Moon's passing the Meridian. The proportional Part of $38'. 20''$. answering to this, is $6'. 17''$. and the proportional part of $6'. 17''$. is $9''$; therefore $6'. 17''$. and $9''$. or $6'. 26''$. added to $3^h. 55'. 43''$. give $4^h. 2'. 9''$. the apparent Time of the Moon's passing the Meridian. In the Ephemeris it is $4^h. 2'$. It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets, it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The 5th, 6th, 7th, 8th, 9th, 10th, and 11th Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motion, and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitude, Latitude, and Declination of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, horizontal

horizontal Parallax, with its proportional Logarithm, are computed Twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16^h. 22'. 16". First to find the Longitude. The Moon's Longitude, July 16, at 12^h. is 0°. 60'. 40". 25". and July 17 at Noon, 0°. 13°. 47'. 48". the Difference 7°. 7'. 23". is the Moon's Motion in 12 Hours; say then, by the Rule of Proportion,

As 12^h. is to 4^h. 22'. 16" (the excess of 16^h. 22'. 16" above 12^h.) so is 7°. 7'. 23". to 2°. 35'. 41". but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of second Difference annexed to Mr. Taylor's Sexagesimal Table, P. 244—247: for this Purpose take out of the Ephemeris the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows;

		1st Diff.	2d Diff.
		° ' "	' "
July 16, Noon	11.29.29.34	7.10.51	
Midnight	0. 6.40.25	7. 7.23	3.28
17, Noon	0.13.47.48	7. 3.39	3.44
Midnight	0.20.51.27		

Take their Differences, 7°. 10'. 51", 7°. 7'. 23", 7°. 3'. 39", take the Differences of these Differences, or the 2d Differences 3'. 28"; 3'. 44". and take their Mean which is 3'. 36". Now look for the Equation of second Difference, answering to 4^h. 22' after Midnight, found on the Side, and 3'. 36" at Top, which will be found = 24", and which, according to the Remark at the Bottom of the Table, must be added to 2°. 35'. 41", the first proportional Part, because the Motion in 12 Hours or first Differences are decreasing; the Sum 2°. 36'. 5" added to 0°. 60'. 40". 25", the Moon's Longitude at Midnight, gives 0°. 9°. 16'. 30", the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out, first increase and then decrease, or, vice versa, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude. Take out of the Ephemeris the Two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, Pag. 244—247, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 16^h. 22'. 16".

	D's Lat. by the Ephem.	1st Dif.	2d Dif.	Mean of 2d Dif.
	o " "	1 "	1 "	" "
July 16, Noon	4.31.10 N.	18.26		
Midnight	4.49.36	13.50	4.36	4.40
17, Noon	5. 3.26	9. 6	4.44	
Midnight	5.12.32			

The Moon's Latitude July 16 at Midnight being 4°. 49'. 36" N. and the Motion in the next 12 Hours being 13'. 50". say by Proportion,

X

As

As 12^h . is to 4^h . $22'$. $16''$, so is $13'$. $50''$ to $5'$. $2''$: but this must be corrected by adding $32''$, the Equation of second Difference, answering to the Hour 4^h . $22'$, and the Mean second Difference $4'$. $40''$, because the first Differences are decreasing, or rather because the first of them $18'$. $26''$, is greater than the last of them $9'$. $6''$. therefore the proportional Part corrected is $5'$. $2'' + 32'' = 5'$. $34''$, which added to 4° . $49'$. $36''$, gives 4° . $55'$. $10''$ N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the Ephemeris for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or vice versa, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference from Pag. 244—247, answering to the Mean second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease; and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences

ferences standing on each Side of the Interval to be interpolated, is to be accounted the mean second Difference; the Equation corresponding to it by Table, Pag. 244—247, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed $2\frac{1}{2}$, this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page 6, and 7, viz. the Moon's right Ascension, her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour may be found very readily by the Help of the Table of proportional Logarithms, Pag. 39—55 of the Requisite Tables.

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of the Month, as well as in the Appulses to Stars pointed out in Page 1; and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixt Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the Ephemeris shews the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See British Mariner's Guide, Page 57, and Requisite Tables, P. 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See British Mariner's Guide, Page 93, and Requisite Tables, Page 15. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See British Mariner's Guide, Page 61, and Mr. Edwards's 5th Problem annexed to the Nautical Almanac of 1781, Page 10.

The Distances of the Moon from the Sun and fixt Stars, contained in the 8th, 9th, 10th, and 11th Pages of the Month, are set down to every Three Hours of Apparent Time by the Meridian of Greenwich, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the Sun,
her

her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from 90° to 120° . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the Ephemeris, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90° and 120° Distance from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the Lunar Tables will affect the Result from either Star equally. But the Error of Mayer's last Lunar Tables as corrected from a Series of Dr. Bradley's Observations of 9 Years, by Mr. Charles Mafon in 1778, being these made use of for the Nautical Almanac of 1789, and the subsequent ones, probably never exceeding $30''$, the Uncertainty hence arising in the Determination of the Longitude can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances set down in the Ephemeris, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the Ephemeris, neglecting the Seconds, at the apparent
Time

Time estimated nearly by the Meridian of Greenwich; and direct his Sight to the East or West of the Moon, according as the Distance at Greenwich is found in the 8th and 9th, or 10th and 11th Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at Greenwich is estimated nearly by turning the supposed Longitude from Greenwich into Time, by Requisite Tables, Page 38, and adding it to or subtracting it from the apparent Time at the Ship, as its Longitude is West or East of Greenwich. It will be sufficient if the Distance be computed from the Ephemeris within 10', or 20', for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixt Stars; namely, in determining the Longitude by Comparison with the corresponding Distances observed at Sea, is shewn in Problem XI. Page 37 of Requisite Tables.

The Distances contained in the Ephemeris were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shewn for computing the Moon's Latitude, Page 161—163; except that the Correction of second Differences at the Middle of the Interval to be interpolated, was taken $\frac{1}{8}$ of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken $\frac{3}{4}$ of the Correction just found at the Middle of the Interval; instead of consulting Mr. Taylor's Table, Pag. 248 and 249, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its Stead, being derived from Sir Isaac Newton's Solution of the Problem of drawing

drawing a Curve through the Extremities of any Number of given Ordinates. Phil. Nat. Princ. Math. Page 486. Edit. Londini 1726, or Dr. Horsley's complete Edition of Sir Isaac Newton's Works, Vol. 3d. Page 128.

From Four Distances at Noon and Midnight computed strictly to interpolate Three Distances at the 3d, 6th, and 9th Hour of the first or last Interval.

Subtract each Distance from the following, for the first Difference, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Difference: And in like Manner subtract the First second Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by b ; the first or last second Difference by c , according as the Interpolation to be made is for the first or last 12 Hours; denote also the third Difference by d ; and, a being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

$$\text{At 3d Hour of first Interval } a + \frac{1}{4}b - \frac{3}{32}c + \frac{7}{128}d$$

$$\text{At 6th Hour of first Interval } a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$$

$$\text{At 9th Hour of first Interval } a + \frac{3}{4}b - \frac{3}{32}c + \frac{5}{128}d$$

Or

$$\text{At 3d Hour of last Interval } a + \frac{1}{4}b - \frac{3}{32}c - \frac{5}{128}d$$

$$\text{At 6th Hour of last Interval } a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$$

$$\text{At 9th Hour of last Interval } a + \frac{3}{4}b - \frac{3}{32}c - \frac{7}{128}d$$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b , c or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a Mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or 6th Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and
third

third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page 12th and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark $\odot$, and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right Hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher 0, sometimes annexed to the Figure of the Satellite towards the Margin, signifies that it is invisible on the Face of Jupiter; and the black Mark $\bullet$, signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter eclipsed by his Body.

THE END.

27 AP 66

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third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

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